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REPORT

OF THE

HEALTH DEPARTMENT

CITY OF RICHMOND

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ANNUAL REPORT

OF THE

HEALTH DEPARTMENT

OF THE

CITY OF RICHMOND, VA.

FOR THE

Year Ending December 31, 1914

RICHMOND:
CLYDE W. SAUNDERS, CITY PRINTER
1915

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W. T. TUCK, Chief Sanitary Officer.
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W. H. MOSLEY, S. A. HALL,
T. W. MITCHELL,

FUMIGATOR.

JAMES F. WALLER.

STENOGRAPHER.

MISS M. L. ELMORE.

RICHMOND, VA., *February* 15, 1915.

HONORABLE GEORGE AINSLIE,
Mayor of the City of Richmond.

SIR:

The Board of Health of the City of Richmond submits, as their report for the year ending December 31, 1914, the accompanying reports of the Chief Health Officer and his subordinate officers.

Very respectfully,
W. T. OPPENHIMER, M. D., President.
JAMES R. GORDON,
R. D. GARCIN, M. D.,
M. D. HOGE, JR., M. D.,
JAMES E. PHILLIPS, JR.

ANNUAL REPORT

REPORT OF THE CHIEF HEALTH OFFICER.

RICHMOND, VA., *March* 1, 1915.

To the Honorable Board of Health of the City of Richmond.

GENTLEMEN:

I have the honor to submit for your consideration the forty-third annual report of the Richmond Health Department. This report embraces my ninth annual report as Chief Health Officer, a financial statement of receipts and disbursements, statistical tables and the reports of other officers of the Health Department. Brief reports are also included from the City Coroner, Assistant Coroner and the City Chemist, covering such parts of their work as were done for the Health Department or are of special interest to this Department.

I am certain that the Board of Health will share the gratification with which I report that the year 1914 was beyond question the most successful we have ever had. Our general death rate was the lowest on record for our city, and the same is true of the death rate from three very important preventable diseases—typhoid fever, diphtheria and infantile diarrhea. There was only 1 death from malarial fever during the year (equivalent to a death rate of .7 per 100,000), in contrast to the high rates formerly reported. This, however, broke no record, since in 1913 not a single death was reported as due to this cause. There were only 2 deaths from scarlet fever in 1914 (equivalent to a death rate of 1.5 per 100,000), but this also broke no record.

Our death rate from consumption was lower than for any previous year with the single exception of 1913. There was but 1 death from measles, a rate of .7 per 100,000. For this, however, we cannot claim any special credit, since 1914 was simply not a "measles year." On the other hand, 1914 was decidedly a "whooping cough year," there having been 61 deaths from this cause, or 43.2 per 100,000 inhabitants.

TERRITORY ANNEXED IN 1914.

On November 5, 1914, the City of Richmond more than doubled its territory by annexation. About 13 square miles were added to the previous area of about 11 square miles. The added population was estimated at about 18,000. Believing that any attempt to do otherwise would only result in confusion, I reached an agreement with both the United States Bureau of the Census and the State Health Department not to include in our regular statistical tables for 1914 deaths, births, etc., occurring in the new territory. A separate table covering deaths in the annexed territory from the date of annexation, November 5, to the end of the year is given.

GENERAL DEATH RATE.

The total number of deaths in the City of Richmond during 1914 was 2,658, which was 60 less than in 1911 and 1913, and 57 less than in 1912. The general date rate for Richmond in 1914 was the lowest on record, having been 19.70 per 1,000 inhabitants, including deaths among nonresidents. Excluding deaths among nonresidents, the general death rate was 17.80 per 1,000.

The number of deaths and the death rate, each with nonresidents included and excluded, are given in the following table, covering the eight complete years since reorganization of the Richmond Health Department in 1906.

YEAR	NUMBER OF DEATHS			DEATH RATE PER 1,000 INHABITANTS		
	Non-residents included	Non-residents only	Non-residents excluded	Non-residents included	Non-residents only	Non-residents excluded
1907	2,652	155	2,497	23.38	1.37	22.02
1908	2,486	167	2,319	21 66	1.45	20 20
1909	2,404	219	2 185	20.69	1.88	18.81
1910	2,887	331	2,556	22.57	2.59	19.98
1911	2,718	267	2 451	20.95	2.06	18.89
1912	2,715	290	2,425	20.65	2 20	18.45
1913	2,718	297	2 421	20.41	2.23	18.18
1914	2,658	256	2,402	19.70	1.90	17.80

The above table shows that the crude death rate of Richmond for 1914 was the lowest for any of the years since reorganization of the Health Department in July, 1906. Prior to that time deaths among nonresidents were not included, nor were deaths of infants less than one day old. Hence the death rates published in the annual reports prior to 1906 are not comparable with the rates given in the above table. When the steady decline in the death rate during the past eight years (as shown in the above table) is taken into consideration, as well as the fact that the death rate from practically all acute contagious diseases, consumption and infantile diarrhea has been notably less in the past eight years than ever before, we are certainly justified in concluding that our death rate for 1914 was the lowest ever known in Richmond.

Richmond labors under a number of handicaps in its effort to lower its general death rate. Its large negro population, with a death rate so far in excess of that of the white races, as well as the large number of deaths among nonresidents, due to the number of hospitals in the city, are prominent causes of our high crude death rate.

I have repeatedly called attention to the uselessness of crude death rates as a criterion of the healthfulness of a community or of the efficiency of the work done by the health department. Only for comparing conditions in a given community year by year (and then only when we are assured that the character of the population has undergone no essential change) can the crude death rate properly be used as a standard. Not even when thus limited in its application can the crude death rate be blindly relied on. The death rate from a number of important causes undergoes fluctuations from year to year. At times these fluctuations will so occur as to offset each other to a great extent. Then, again, the crest, or the furrow, of these several natural waves of fluctuation will coincide, giving an abnormally high, or an abnormally low, death rate which, on further analysis, can be shown to be due to causes largely beyond our control.

It is, therefore, chiefly by careful study of the death rate from special causes that we can establish the value of the health work done in any community, and it is the height of folly to draw any conclusions as to the relative healthfulness of different communities, or the relative efficiency of their public health work, simply from comparison of their crude death rates.

DEATH RATES FROM SPECIAL CAUSES.

The following table gives the death rate in Richmond from a number of important causes for each of the past five years, the average annual death rate from these causes for the past five years, the annual average for the three years (1907-1909) following reorganization, and a comparison of the average annual death rate from these causes in the two periods just mentioned.

Table Giving Death Rate from Certain Important Causes, in the City of Richmond, Virginia, for the Years 1910–1914, Inclusive; the Average Annual Death Rate from These Causes for the Three-Year Period, 1907–1909, and the Five-Year Period, 1910–1914, Inclusive; and a Comparison of the Death Rate for These Two Periods.

CAUSE OF DEATH	Annual Average 1907–1909	DEATH RATE PER 100,000					Annual Average 1910–1914	Decrease or Increase in Average Annual Death Rate of 1907–1909 Compared with 1910–1914
		1910	1911	1912	1913	1914		
Typhoid fever	38.4	21.9	17.7	16.7	20.3	14.1	18.1	20.3
Malarial fever	14.0	4.7	.8	2.3	....	.7	1.7	12.3
Measles	12.3	22.7	9.3	.8	18.8	.7	10.5	1.8
Scarlet fever	.6	....	2.3	.8	3.8	1.5	1.7	1.1 *
Whooping cough	14.2	36.7	39.3	3.8	12.8	45.2	27.6	13.4 *
Diphtheria	8.4	10.2	10.0	6.1	6.0	3.0	7.1	1.3
Dysentery	17.5	12.5	20.0	14.4	15.8	8.2	14.2	3.3
Influenza	29.1	25.8	24.7	19.0	22.5	18.5	22.1	7.0
Pneumonia (lobar or unqualified)	145.0	115.7	88.6	86.0	76.6	90.4	91.5	53.5
Bronchopneumonia	51.8	77.4	64.0	79.1	70.6	90.4	76.3	24.5 *
All diseases of the respiratory system (consumption not included)	315.1	283.8	225.1	243.4	231.3	244.6	245.6	69.5
Consumption	210.6	223.6	206.6	205.4	160.7	183.1	195.9	14.7
Other tubercular diseases	38.9	30.5	42.4	38.8	45.0	36.3	38.6	.3
Cancer (of all organs)	74.3	85.2	87.1	91.3	86.3	92.6	88.5	14.2 *
Apoplexy	135.7	150.1	147.2	151.4	139.6	126.7	143.0	7.3 *
Organic heart disease	159.4	174.3	167.3	216.8	209.5	192.7	192.1	32.7 *
Bright's disease	128.6	181.0	161.1	168.1	165.9	146.8	164.6	36.0 *
Diarrhea (under 2 years)	130.2	132.1	151.1	100.4	84.1	71.9	107.9	22.3
Diarrhea (over 2 years)	38.1	26.6	30.1	25.1	30.8	20.0	26.5	11.6
Congenital debility	114.9	110.2	97.9	117.9	120.1	114.1	112.1	2.8
Suicide	10.7	9.4	20.0	13.7	19.5	10.4	14.6	3.9 *
Legal electrocution †	5.4	11.7	2.3	5.3	10.5	6.7	7.3	1.9 *
Other violent deaths (nonsuicidal)	101.0	122.0	113.3	123.2	113.4	138.6	122.1	21.1 *
Cause of death ill defined or unknown	79.0	83.0	43.9	32.0	23.3	33.4	43.1	35.9
Total deaths, all causes:								
Non-residents included	2,191	2,257	2,095	2,065	2,041	1,970	2,085	106
Non-residents excluded	2,034	1,998	1,889	1,845	1,818	1,780	1,866	168

***Increase.**

†The first legal electrocution, under the Act of 1908 (by which all electrocutions, for crime committed in any part of the State, are conducted in Richmond) was in October, 1908.

All death rates in the above table are calculated from the official census of 1910 and the postcensal estimates of the United States Bureau of the Census for intercensal years. The death rates given in the above table for the years 1911, 1912 and 1913 are slightly lower than those given in previous reports. This is due to revised estimates of population sent out by the Bureau after the 1913 annual report was written.

REVISED ESTIMATES OF POPULATION.

In connection with the above table, and many which are to follow, I wish to direct attention, more fully than is done in the footnote, to the fact that the death rates given for the years 1911, 1912 and 1913 differ slightly from those given for these years in previous annual reports. Death rates are obtained by dividing the number of deaths by the population. After the 1913 annual report was written, the United States Bureau of the Census sent out revised estimates of population for all cieies. These new estimates gave Richmond a slightly larger population than had the previous ones. They were received too late to be used in the 1913 report.

In the above table all death rates for 1911, 1912 and 1913 have been recalculated, using the later estimates of population. Where the number of deaths from any given cause is quite small, the difference in the corresponding rate is too small to appear in the first decimal place. Where the changed estimates of population give a different rate, this rate is, of course, lower than before. What has just been said in connection with the above table applies, naturally, to all tables which include death rates or birth rates for the years referred to.

The above table shows a very decided and continued reduction in the death rate from all preventable diseases, including infantile diarrhea. On the other hand, the death rate from cancer, apoplexy, heart disease, Bright's disease and violence (suicidal and other) has been steadily increasing. The great reduction in the death rate from the former class of diseases has, however, not only offset the increase in the rate from the latter class, but has gone beyond this and given a net gain.

POSITION OF CITY BACTERIOLOGIST.

Ever since I have been connected with the Health Department I have felt that the position of City Bacteriologist was on a very unsatisfactory basis. The office was established a few months before the general reorganization of the Department in 1906. Originally the work was combined with other laboratory work for the city, and the salary, $900.00 a year, was admittedly in payment for only part of a technically trained man's time. Later on, when conditions changed and this arrangement was no longer feasible, the small pay became, and remained, a source of constant embarrassment. This was partly overcome by the Board's arranging to pay an additional $600.00 a year for bacteriological examination of milk, but the entire amount, $1,500.00 a year, was still insufficient to secure the whole-time services of a competent bacteriologist. In consequence of this, we either got so little of the time of competent men as to be unsatisfactory, or else got men less efficient than the importance of the work demanded.

When Mr. A. H. Straus, B. S., who had been with us five years when he resigned last summer, held the office, he was forced to add to his salary by teaching at the Medical College of Virginia. This arrangement was finally unsatisfactory to him, so he resigned in June and accepted a professorship at the Medical College of Virginia. During the entire time he was with us his work was eminently satisfactory. For a very brief time after his appointment, in 1909, the idea that any one not a graduate in medicine could be a bacteriologist was not grasped by a few of our Richmond doctors. This soon passed, and thereafter the work of Mr. Straus had the complete confidence of the medical profession. Unquestionable accuracy in every detail is an absolute essential, and it was a great comfort to me to know that his work could always be relied on.

Early last summer the Board of Health, on my recommendation, sent to the City Council an ordinance increasing the salary of the City Bacteriologist to $2,000.00 a year and making the office a whole-time one. This ordinance also contained a provision whereby the Board of Health, in view of the importance of the work and the technical training demanded, was empowered to employ a bacteriologist not a resident of Richmond in the event of their being unable otherwise to fill the office in a satisfactory manner. This, I believe, is the first instance in which it has been made legal in Richmond to fill any city position except with a "citizen and taxpayer." Let us hope that this is but the beginning of a realization that city offices are, or should be, primarily for the benefit of the city and not of the office holder. The city is entitled to get the best men regardless of where they are to be found.

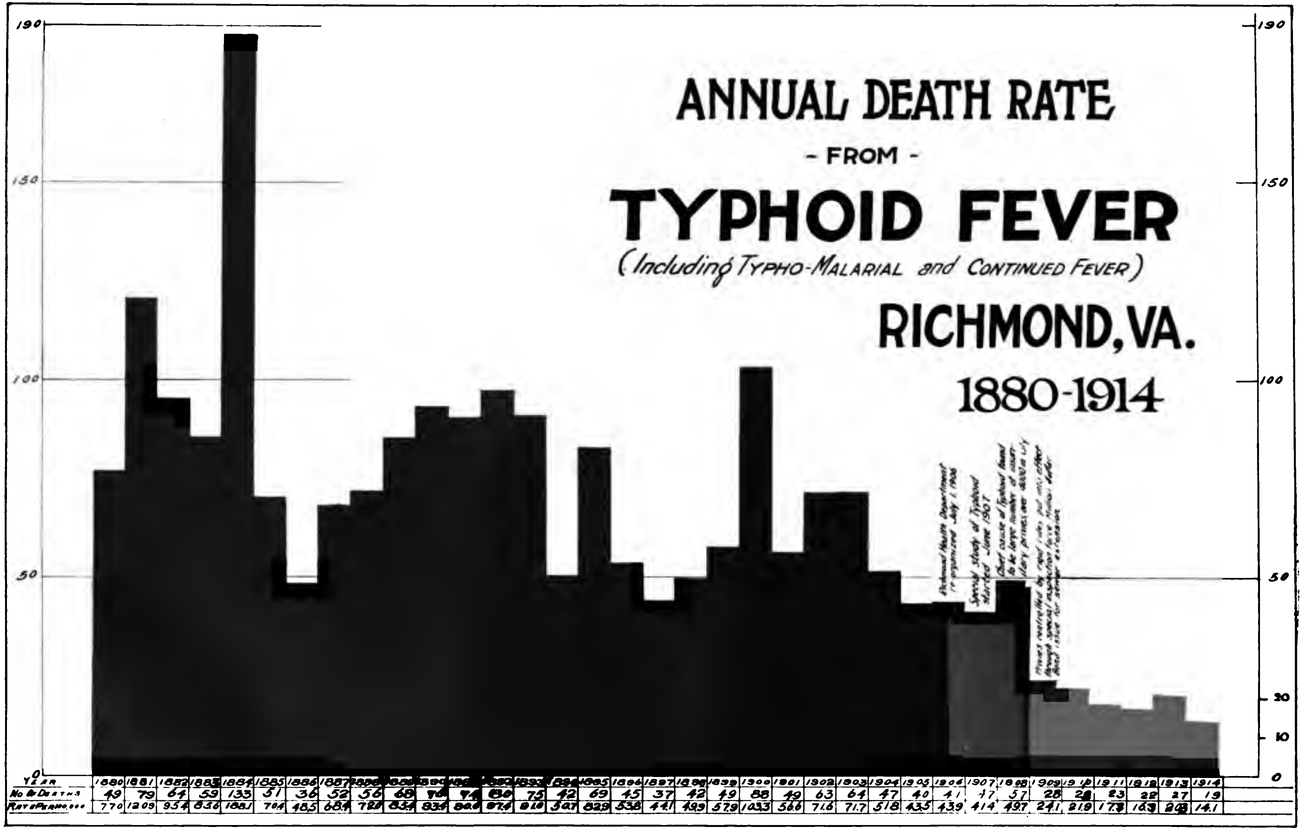
The above-mentioned ordinance was adopted by the City Council in August. Even after its passage, and the consequent better salary, considerable difficulty was experienced in getting the office properly filled. The few bacteriologists already established in private work here, and all of them teaching in the college as well, were not attracted by a salary of $2,000.00 for their entire time. To go outside of the city had great risks, nor were we able to get in touch with any out-of-town man whose training appealed to us strongly and who was willing to come for the salary.

Finally, in November, the Board of Health elected Dr. Kenneth D. Graves, who was then Assistant State Bacteriologist. During the time Dr. Graves has been with us his work has been good. He has shown most earnest determination not only to carry on the work which has heretofore been done by the City Bacteriologist, but to go into additional lines of work, as will be expected of a whole-time man, as soon as the regular routine work is established. Just what new lines will be taken up is still under consideration. I am confident that Dr. Graves will make good.

TYPHOID FEVER.

All previous records for typhoid fever were again lowered in 1914, there having been only 148 cases and 19 deaths, equivalent to a death rate of 14.1 per 100,000. These figures include all cases and deaths among nonresidents, as well as all cases and deaths in which the disease was contracted outside of the city.

The following table gives the number of deaths from typhoid fever and the death rate per 100,000 population for the past thirty-five years:



ANNUAL DEATH RATE
- FROM -
TYPHOID FEVER
(Including Typho-Malarial and Continued Fever)
RICHMOND, VA.
1880-1914

Year	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
No. of Deaths	49	79	64	59	133	51	36	52	56	68	76	74	80	75	42	69	45	37
Rate per 100,000	77.0	120.9	95.4	85.6	188.1	70.4	48.5	68.4	72.0	83.4	93.4	90.6	97.4	91.0	50.7	82.9	53.8	44.1

Year	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
No. of Deaths	42	49	88	49	63	64	47	40	41	47	57	28	28	23	22	27	19
Rate per 100,000	49.9	57.9	103.3	56.6	71.6	71.7	51.8	43.5	43.9	41.4	49.7	24.1	21.9	17.3	16.3	20.3	14.1

Table Showing Annual Number of Deaths from Typhoid Fever (Including "Typho-Malarial Fever" and "Continued Fever") and the Annual Death Rate per 100,000, Richmond, Virginia, 1880-1914.

YEAR	DEATHS FROM TYPHOID FEVER		YEAR	DEATHS FROM TYPHOID FEVER	
	Number of Deaths	Rate per 100,000		Number of Deaths	Rate per 100,000
1880	49	77.0	1900	88	103.3
1881	79	120.9	1901	49	56.6
1882	64	95.4	1902	63	71.6
1883	59	85.6	1903	64	71.7
1884	133	188.1	1904	47	51.8
1885	51	70.4	1905	40	43.5
1886	36	48.5	1906	41	43.9
1887	52	68.4	1907	47	41.4
1888	56	72.0	1908	57	49.7
1889	68	85.4	1909	28	24.1
1890	76	93.4	1910	28	21.9
1891	74	90.6	1911	23	17.7
1892	80	97.4	1912	22	16.7
1893	75	91.0	1913	27	20.3
1894	42	50.7	1914	19	14.1
1895	69	82.9			
1896	45	53.8			
1897	37	44.1			
1898	42	49.9			
1899	49	57.9			

YEAR	Average No. Deaths	Average Annual Death Rate from Typhoid Fever per 100,000 population
1880-1884 (5 years)	76.8	113.4
1885-1889 (5 years)	52.6	68.9
1890-1894 (5 years)	69.4	84.6
1895-1899 (5 years)	48.4	57.7
1900-1904 (5 years)	62.2	71.0
1905-1909 (5 years)	42.6	40.5
1910-1914 (last 5 years)	23.8	18.1

The death rates given in the first of the above tables are shown graphically in the following diagram:

The great lowering in the death rate from typhoid fever, as shown in the above tables, and especially well brought out in the diagram, is a demonstration of the possibilities of public health work. I have gone over this so frequently, in my annual reports and elsewhere, that I shall not discuss it very fully here.

For the twenty-six years (1880-1905) preceding reorganization of the Richmond Health Department, the average annual death rate from typhoid fever in Richmond was 77.8 per 100,000 inhabitants. In only four years during this entire period was the death rate under 50, and then very slightly so, the lowest rate for any single year having been 43.5, in 1905.

During the latter half of 1906 there was no way of getting to work on the typhoid problem. In June, 1907, the position of Medical Inspector was established, and thereafter every reported case of typhoid fever was immediately investigated and complete data secured. As these histories accumulated and were studied, it became apparent that neither our water supply nor our milk supply was responsible for our typhoid cases at that time. Towards the end of that year, 1907, it became apparent that the chief cause of our typhoid fever was the insanitary dry closet and spread from local foci cases and carriers in the city.

The correctness of this conclusion was verified by a clean-cut waterborne epidemic of typhoid fever in January and February, 1908. There were 74 cases in this outbreak. The features of this epidemic were so utterly different from those of the summer type of typhoid as to point conclusively to the fact that this outbreak was caused by our water supply, and that the summer cases were not.

When the conclusion was reached that spread from local foci was the chief cause of our high typhoid fever death rate, and that this spread was largely through insanitary privies, we began to put into effect measures based on this belief. Publicity was given to the great importance of sewer connections, and a bond issue of $1,000,000 was authorized by the City Council for extension of sewer and water services. This did away with over 1,000 of these privies (there were then over 4,000 in all) the first year. The Board of Health adopted rigid rules and regulations governing the construction and maintenance of privies. A special force of sanitary officers was employed early in 1909 to inspect every privy in the city, note its defects and order either that these be corrected (where this was feasible) or that a new privy be built. Of course no privy has ever been allowed where sewer and water are available. A second round was made to see that these orders had been complied with.

In consequence of all this, by the summer of 1909 we had at least 1,000 less privies than before, and all those left had been put in good order. Every case of typhoid fever, as soon as reported, was visited by the Medical Inspector, not only to get the history, as mentioned above, but also to give complete instructions to prevent its spread. This, of course, reached only the recognized cases. The privy work reached carrier cases as well.

The above is the briefest resume of the most important things done in 1909 to lessen the prevalence of typhoid fever. There was no change whatsoever in our public water supply that year. The typhoid death rate fell the first year to 24.1. The next year it dropped to 21.9 and so on down. In 1910 our water purification plant was completed and put in operation.

The importance of our water purification plant, from the standpoint of typhoid fever, should be clearly understood. I do not believe that in past years our water supply was at all a prominent cause of our high typhoid fever death rate. Our typhoid deaths showed the seasonal distribution characteristic of typhoid not due to water, that is, the greatest number of deaths were in the summer and fall of the year. This I have fully discussed in other places.

On the other hand, subsequent developments have convinced me that there must have been occasional water-borne epidemics of typhoid fever in Richmond in former years, not sufficient, however, to alter the seasonal curve above referred to.

There was an undoubted water outbreak in January and February, 1908, a smaller one February, 1909, both before our water purification plant was in operation. Then, in 1913 we had two quite small water outbreaks—one on the south side of the river, due to temporary stoppage of filtration, and one on the north side, due to trouble at the settling basins. In brief, on account of the rapidity with which the nearby country up the river has been settled within the past five or six years, I am confident that, whatever may have been the case in past years, we would have a great deal of typhoid fever from our water supply but for the fact that it is purified before coming into our homes. Nothing should be allowed to interfere with the continued careful operation of our water purification plant.

TYPHOID DEATHS IN 1914.

There were only 19 deaths from typhoid fever in Richmond in 1914, thus giving us not only the lowest death rate from this disease (14.1 per 100,000) but also the smallest number of deaths ever recorded. Even this small number of deaths would have been smaller but for cases of the disease contracted out of the city and dying here. The following table gives a brief history of all fatal cases of typhoid fever in Richmond during 1914:

Table Giving a Brief History of the Nineteen (19) *Deaths from Typhoid Fever in the City of Richmond, Virginia, During* 1914, *With Special Reference to* (1) *Where Disease was Contracted,* (2) *Whether Resident or Nonresident of Richmond, and* (3) *Whether Diagnosis was Positive or Doubtful.*

CASES CONTRACTED IN CITY.

1. (*Resident*) 3-37, *white female,* 45 *yrs., died Jan.* 5. *Ill since Dec.* 26. *Severe pain in abdomen, high temperature from start. No lab. examinations. Diagnosis, made just before death, was extremely doubtful.*
3. (Resident) 241 (1913 series)—210, white female, 4 yrs., died Jan. 25. Carried over from 1913. Mother died of typhoid on Dec. 20, 1913.
4. (Resident) 12-547, colored female, 22 yrs., died Mar. 9. Widal positive.
5. (Resident) 18-1061, white female, 31 yrs., died May 9.
6. (*Resident*) 24-1191, *colored female,* 16 *yrs., died May* 30*th after* 15 *days illness. Palpitation and shortness of breath. Never confined to bed, was up on day of death. Lab. findings negative. Diagnosis very doubtful.*
7. (Resident) 25-1206, colored male, 31 yrs., died June 1. Blood culture and Widal negative. Fell out of bed in delirium and fractured femur.
10. (Resident) 60-1738, white male, 26 yrs., died Aug. 8. Had spent 3 days (12th-14th days before taking to bed) at a seaside resort from which a number of typhoid cases come every year. Carried as 50 per cent. probability contracted out of city.
11. (Resident) 87-1832, colored male, 48 yrs., died Aug. 24. Blood culture and Widal negative.
12. (*Resident*) 82-1845, *colored female,* 16 *yrs., died Aug.* 27. *Cause of death stated as "Typhoid infection of left lung." Several cases of pulm. Tb., confirmed bacteriologically, in same house and family, one dying during year almost certainly pulm. Tb.*
13. (Resident) 80-1861, colored male, 19 yrs., died Aug. 30. Widal positive.
14. (Nonresident) 81-1966, white male, 29 yrs., died Sept. 16.
17. (Resident) 132-2341, white female, 43 yrs., died Nov. 14. Widal doubtful.
18. (Resident) 139-2522, colored male, 9 yrs., died Dec. 14.
19. (Resident) 144-2559, white male, 42 yrs., died Dec. 18. Widals: one doubtful, one negative.

CASES CONTRACTED OUT OF CITY.

2. (Nonresident) 5-184, colored male, 21 yrs., died Jan. 23. Brought in ill from Fair Oaks.
8. (Resident) 35-1508, white male, 17 yrs., died July 9. Contracted while out of city. Severe case of typhoid where visiting.
9. (*Nonresident*) 72-1632, *colored male,* 24 *yrs., died July* 25. *Was brought into city ill. No lab. examinations. Died on* 7*th day of illness; history pointing to appendicitis rather than typhoid.*
15. (Resident) 96-1998, colored female, 19 yrs., died Sept. 20. Blood culture positive; Widals doubtful. Had been living a few miles out of city for two or three months before taken to bed and was brought in ill.
16. (Nonresident) 112-2051, colored male, 25 yrs., died Sept. 29. Brought to city ill and died next day from hemorrhage from bowel.

(*Explanatory Note.*) The first figure preceding each case in the above table is the consecutive number of each of the 19 fatal cases of typhoid fever in Richmond during 1914, according to the date of death. The first part of the second (hyphenated) figure refers to the serial number of each case in the records which the Richmond Health Department keeps of all cases of typhoid fever in the city, while the second part of this figure is the registered number of the certificate of death in each case. These latter figures are given for our own use only, enabling us to refer immediately to the full records of these cases and to the certificates of death, if it is desired to make further studies of these cases at any time. Cases printed in italics are those in which the diagnosis of typhoid fever was more or less doubtful. Words in quotation are taken from statements made by the attending physician on the death certificate. Decedents who had been in Richmond six months or less are classified as nonresidents.

The fatal cases of typhoid fever occurring in Richmond during 1914, shown in detail in the above table, may be classified as follows:

Table Giving Summary of Typhoid Deaths in Richmond During 1914, *Classified According to* (1) *Where Disease was Contracted,* (2) *Whether Resident or Nonresident of Richmond, and* (3) *Whether Diagnosis was Positive or Doubtful.*

	CONTRACTED IN RICHMOND			CONTRACTED OUT OF RICHMOND			ALL CASES		
	Resident	Nonresident	Total	Resident	Nonresident	Total	Resident	Nonresident	Total
Diagnosis positive.....	10	1	11	2	2	4	12	3	15
Diagnosis doubtful....	3	0	3	0	1	1	3	1	4
All cases..............	13	1	14	2	3	5	15	4	19

While, of course, the death rate from typhoid fever for 1914 must be given as 14.1, calculated from the entire number of deaths (19) which were attributed to that disease by the physician in attendance, without reference to where the disease was contracted or whether the cause of death appeared to be actually typhoid fever, it is of interest to calculate the death rate from this disease from some of the figures given in the last table.

	Number of Deaths.	Death Rate per 100,000.
All deaths from typhoid fever in Richmond during 1914..	19	14.1
Excluding nonresidents who contracted the disease outside of Richmond	16	11.9
Excluding all cases contracted outside of Richmond....	14	10.4
Excluding all cases contracted outside of Richmond and all cases contracted in Richmond in which the diagnosis was doubtful	11	8.2

It is thus seen that, low as was our death rate from typhoid fever last year, it would have been still lower (11.9 per 100,000 inhabitants) but for deaths among persons who did not live in Richmond and did not contract the disease here; lower yet (10.9 per 100,000) if we exclude the two deaths of Richmonders who contracted the disease elsewhere, and still lower (8.2 per 100,000) if we exclude the three Richmonders who, it seems likely, died from some cause other than typhoid.

MALARIAL FEVER.

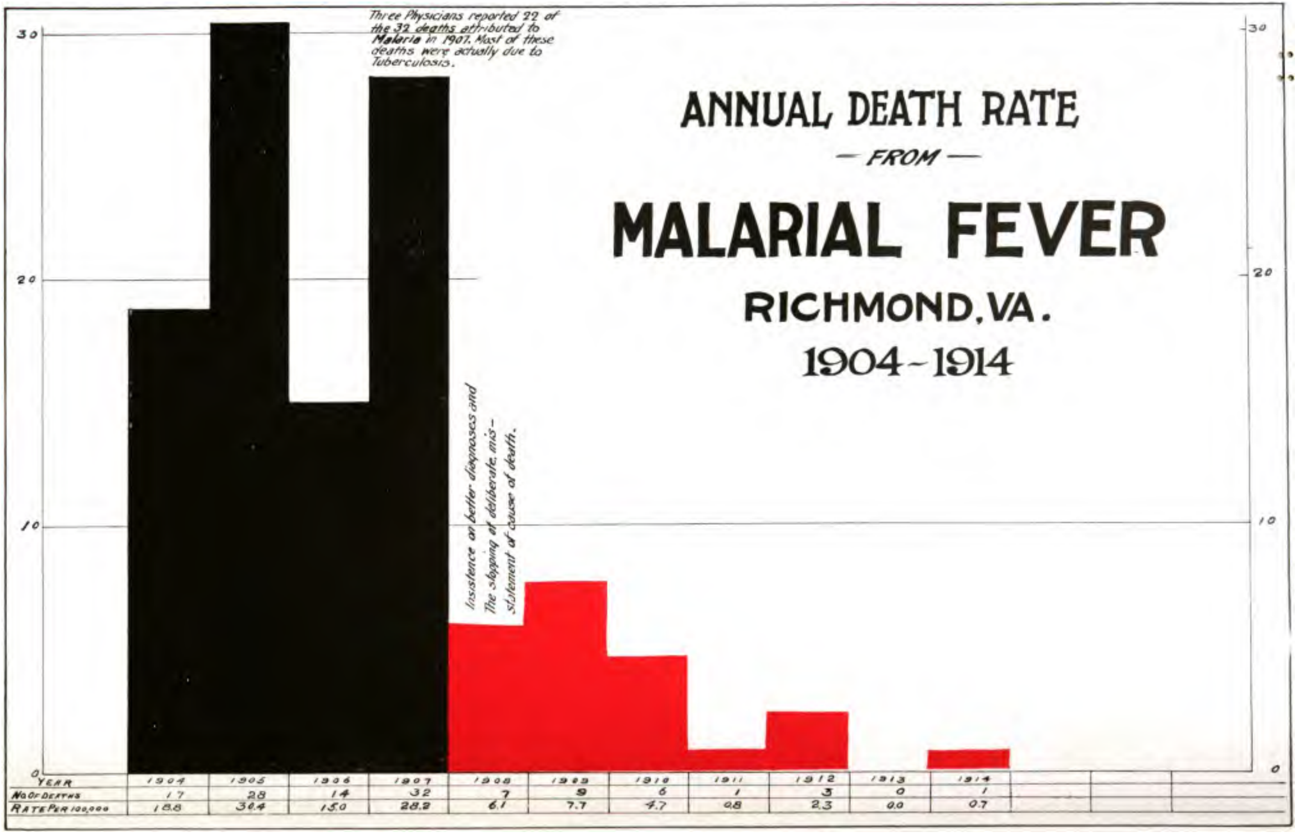
There was only one death from malarial fever in the city of Richmond in 1914, equivalent to a death rate of .7 per 100,000 inhabitants. The following table gives the number of deaths and the death rate from malarial fever in the city of Richmond for the past eleven years:

YEAR	DEATHS FROM MALARIAL FEVER	
	No. of Deaths	Death Rate per 100,000
1904	17	18.8
1905	28	30.4
1906	14	15.0
1907	32	28.2
1908	7	6.1
1909	9	7.7
1910	6	4.7
1911	1	0.8
1912	3	2.3
1913	0	0.0
1914	1	0.7
Annual average 1904-07	22.8	23.1
Annual average 1908-10	7.3	6.2
Annual average 1911-14	1.2	1.0

The figures given in the above table are shown graphically in the following diagram:

I have so regularly commented in my recent reports on the significance of the low death rate from malarial fever since 1908—and especially since 1911—as compared with the very high reported death rate from this disease prior to 1908, that it is unnecessary for me to discuss the subject very fully in the present report. Briefly, however, it may be said that the apparent high death rate from malarial fever prior to 1908 was entirely fallacious. As a matter of fact, the deaths reported were not due to malarial fever at all. They were either deaths from consumption which were deliberately misstated on the death certificates on account of small insurance policies, or else they were deaths from unrecognized consumption, or from some obscure suppurative condition which was not recognized by the attending physician. This was recognized in 1907, when it was found that three physicians reported 22 deaths from malarial fever, while the remaining two hundred physicians in Richmond reported 10 deaths from this disease.

When this Department insisted that deliberate falsification must cease and that "malaria" should not be used as a term to cover up the ignorance


ANNUAL DEATH RATE
— FROM —
MALARIAL FEVER
RICHMOND, VA.
1904-1914
Three Physicians reported 22 of the 32 deaths attributed to Malaria in 1907. Most of these deaths were actually due to Tuberculosis.
Insistence on better diagnoses and The stopping of deliberate mis-statement of cause of death.
30
20
10
0
YEAR
No. OF DEATHS
RATE PER 100,000
1904
17
18.8
1905
28
30.4
1906
14
15.0
1907
32
28.2
1908
7
6.1
1909
9
7.7
1910
6
4.7
1911
1
0.8
1912
3
2.3
1913
0
0.0
1914
1
0.7

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of physicians as to the actual cause of death, the death rate from malarial fever dropped tremendously. It was, however, three more years before the rate dropped to a satisfactory point.

As shown in the above table and diagram, there have been but 5 deaths attributed to malarial fever in Richmond in the past four years, an average of 1.2 deaths a year, while the average annual death rate for the past four years has been slightly under 1.0 per 100,000.

While I do not believe that the work of the Richmond Health Department has prevented many deaths from malarial fever, this does not at all mean that our work has not lessened the prevalence of this disease. I am very certain that our work has decidedly limited the number of cases of malaria in Richmond, but since malaria of a fatal type is seldom, if ever, contracted in our city, it is doubtful whether this work has lessened the mortality from this disease.

There is nothing in the way of health conditions which can do a city more harm than a reputation for being "malarious." Such a reputation will undoubtedly keep away from a city enterprises which are looking for a good location. Hence the work which the Richmond Health Department has done in getting correct returns must be a decided asset to our city. Richmond with an annual death rate of 1.0 per 100,000 inhabitants from malaria is surely a more attractive place than Richmond with an annual death rate of 23.1 per 100,000.

One effect of this must, however, be clearly understood. If the above explanation of the greatly reduced death rate from malarial fever is correct (and of this there is no doubt), then the deaths during the past seven years, and especially during the last four years, which would formerly have been assigned to malarial fever are now being assigned to other causes. And the majority of them, nearly all of them in fact, are assigned to tuberculosis, where they actually belong. In other words, tuberculosis now receives credit each year, on an average, for the greater part of the difference between 23.1 and 1.0 (or 22.1) per 100,000 deaths which in former years was regularly being credited to malaria. We must, in consequence, on this count alone, lower our death rate from tuberculosis 15 to 20 per 100,000 before we appear to be lowering it at all.

DIPHTHERIA.

The death rate from diphtheria was the lowest on record for our city. There were only 4 deaths from this disease, equivalent to a death rate of 3.0 per 100,000 population. The number of deaths (4) was the same as in the year 1908, but the population of Richmond in that year was 114,790, while in 1914 it was 134,917. This made the death rate from diphtheria 3.5 per 100,000 in 1908 and 3.0 in 1914.

The following table gives the actual number of deaths from diphtheria and the death rate per 100,000 inhabitants for the past 40 years.

Table Showing the Annual Number of Deaths from Diphtheria (Including Croup), and the Annual Death Rate per 100,000 *in the City of Richmond, Virginia, from* 1875 *to* 1914.

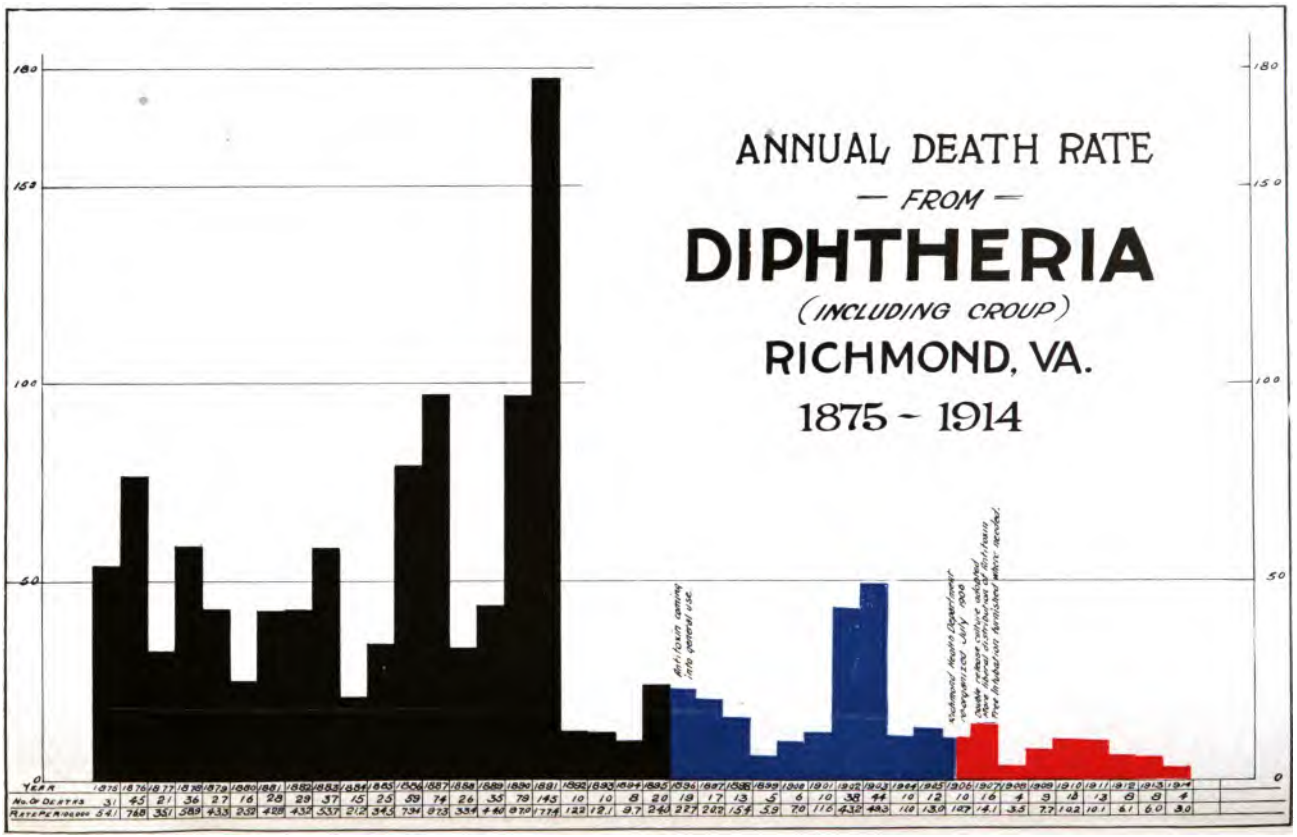
YEAR	DEATHS FROM DIPHTHERIA		YEAR	DEATHS FROM DIPHTHERIA	
	Number of Deaths	Death Rate per 100,000		Number of Deaths	Death Rate per 100,000
1875	31	54.1	1895	20	24.0
1876	45	76.8	1896	19	22.7
1877	21	35.1	1897	17	20.2
1878	36	58.9	1898	13	15.4
1879	27	43.3	1899	5	5.9
1880	16	25.2	1900	6	7.0
1881	28	42.8	1901	10	11.6
1882	29	43.2	1902	38	43.2
1883	37	53.7	1903	44	49.3
1884	15	21.2	1904	10	11.0
1885	25	34.5	1905	12	13.0
1886	59	79.4	1906	10	10.7
1887	74	97.3	1907	16	14.1
1888	26	33.4	1908	4	3.5
1889	35	44.0	1909	9	7.7
1890	79	97.0	1910	13	10.2
1891	145	177.4	1911	13	10.1
1892	10	12.2	1912	8	6.1
1893	10	12.1	1913	8	6.1
1894	8	9.7	1914	4	3.0

The following table gives the average annual number of deaths and the average annual death rate from diphtheria in periods of five years.

PERIOD	Average Number Deaths	Average Annual Death Rate from Diphtheria Per 100,000 Population.
1875-1879 (5 years)	32.0	53.6
1880-1884 (5 years)	25.0	37.2
1885-1889 (5 years)	43.8	57.7
1890-1894 (5 years)	50.4	61.7
1895-1899 (5 years)	14.8	17.6
1900-1904 (5 years)	21.6	24.4
1905-1909 (5 years)	10.2	9.8
1910-1914 (5 years)	9.2	7.1

The figures given in the first of the above tables are shown graphically in the following diagram:

Study of the above tables and diagram shows the great reduction which has been made in the death rate from diphtheria in recent years. That this reduction has been due very largely to the work done by the Richmond Health Department cannot be questioned by any one who is familiar with the work which has been done. The assistance given to physicians by our laboratory in diagnosing diphtheria is of great help. The laboratory also affords the only rational basis for determining the proper time for release of cases.



ANNUAL DEATH RATE
— FROM —
DIPHTHERIA
(INCLUDING CROUP)
RICHMOND, VA.
1875 – 1914

YEAR	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894
No. of Deaths	31	45	21	36	27	16	28	29	37	15	25	59	74	26	35	79	145	10	10	8
Rate per 100,000	54.1	76.8	35.1	58.9	43.3	25.2	42.8	43.2	53.7	21.2	34.5	73.4	87.3	33.4	44.0	87.0	177.4	12.2	12.1	9.7

YEAR	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
No. of Deaths	20	19	17	13	5	6	10	38	44	10	12	10	16	4	9	13	13	8	8	4
Rate per 100,000	24.0	22.7	20.2	15.4	5.9	7.0	11.6	43.2	49.3	11.0	13.0	10.7	14.1	3.5	7.7	10.2	10.1	6.1	6.0	3.0

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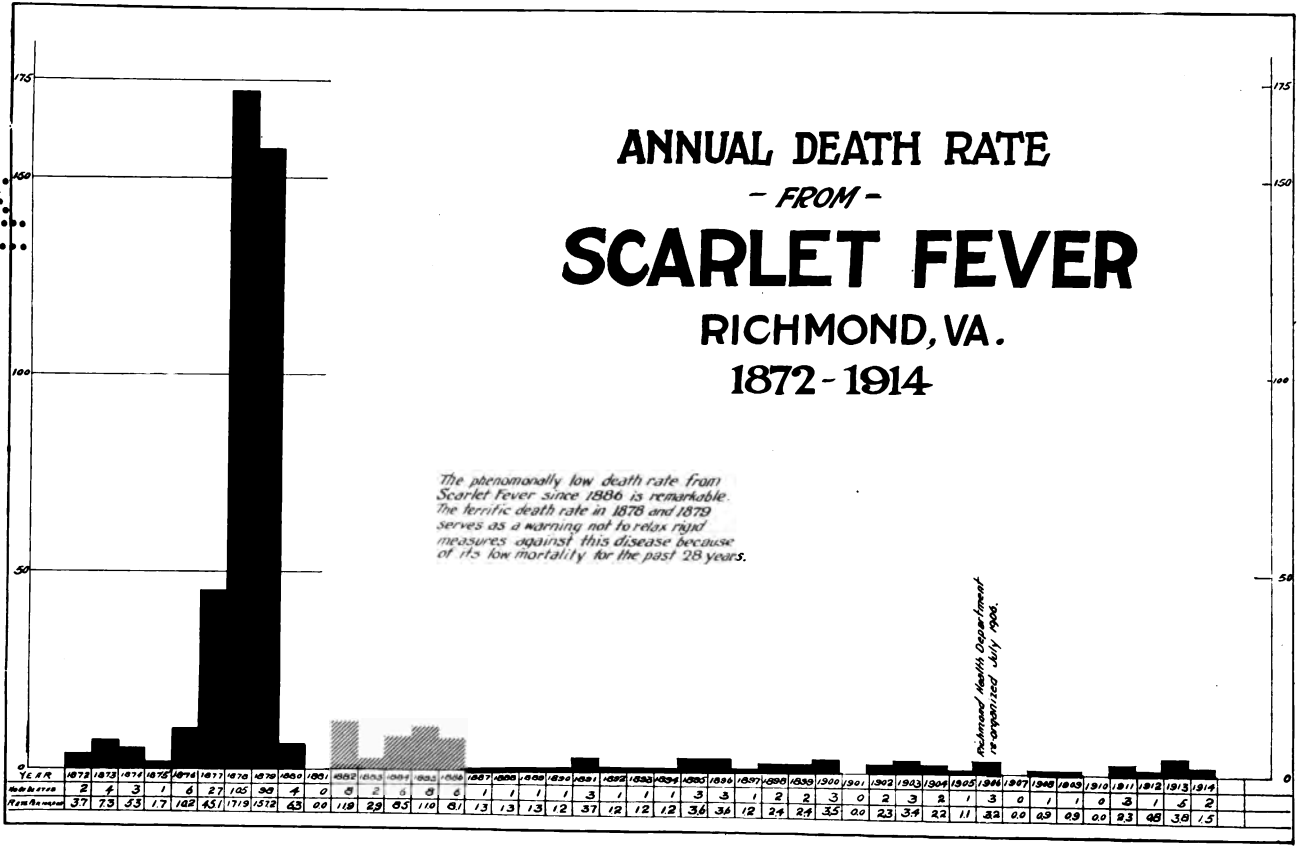


ANNUAL DEATH RATE
- FROM -
SCARLET FEVER
RICHMOND, VA.
1872 - 1914

The phenomonally low death rate from Scarlet Fever since 1886 is remarkable. The terrific death rate in 1878 and 1879 serves as a warning not to relax rigid measures against this disease because of its low mortality for the past 28 years.

YEAR	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893
No. of Deaths	2	4	3	1	6	27	105	98	4	0	8	2	6	8	6	1	1	1	1	3	1	1
Rate per 100,000	3.7	7.3	5.3	1.7	10.2	45.1	171.9	157.2	6.3	0.0	11.9	2.9	8.5	11.0	8.1	1.3	1.3	1.3	1.2	3.7	1.2	1.2

YEAR	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
No. of Deaths	1	3	3	1	2	2	3	0	2	3	2	1	3	0	1	1	0	3	1	5	2
Rate per 100,000	1.2	3.6	3.6	1.2	2.4	2.4	3.5	0.0	2.3	3.4	2.2	1.1	3.2	0.0	0.9	0.9	0.0	2.3	0.8	3.8	1.5

Our policy of liberal distribution of antitoxin for cases unable to pay for it without hardship on the family has saved a great many lives. The Medical Inspector visits promptly every reported case of diphtheria and gives explicit instructions to prevent the spread of the disease. In the course of investigating cases of diphtheria he is frequently able to locate cases not previously recognized. Such cases are then quarantined and further spread from them stopped.

Our mortality from diphtheria has been greatly lowered by our policy of furnishing an expert consultant in laryngeal cases. The results in this connection have been most excellent. In 1914 nineteen laryngeal cases were seen by our consultant, Dr. Lipscomb. Of these cases, nine were intubated without a single death, while of ten cases not intubated only one died. All this is more fully discussed in the reports of the Medical Inspector, Dr. Summers, and the Diphtheria Consultant, Dr. Lipscomb.

SCARLET FEVER.

There were 203 cases of scarlet fever reported during 1914 with 2 deaths, giving a death rate of 1.5 per 100,000 population. The year 1914 adds still another to the long period of years during which the mortality from scarlet fever in Richmond has been exceedingly low. The following table gives the number of deaths and the death rate from scarlet fever in Richmond for the past 43 years.

Table Showing the Annual Number of Deaths from Scarlet Fever and the Annual Death Rate per 100,000 *in the City of Richmond, Virginia, from* 1872 *to* 1914.

YEAR	DEATHS FROM SCARLET FEVER	
	Number of Deaths	Death Rate per 100,000
1872	2	3.7
1873	4	7.3
1874	3	5.3
1875	1	1.7
1876	6	10.2
1877	27	45.1
1878	105	171.9
1879	98	157.2
1880	4	6.3
1881	0	0.0
1882	8	11.9
1883	2	2.9
1884	6	8.5
1885	8	11.0
1886	6	8.1
1887	1	1.3
1888	1	1.3
1889	1	1.3
1890	1	1.2
1891	3	3.7
1892	1	1.2
1893	1	1.2
1894	1	1.2
1895	3	3.6
1896	3	3.6
1897	1	1.2
1898	2	2.4
1899	2	2.4
1900	3	3.5
1901	0	0.0
1902	2	2.3
1903	3	3.4
1904	2	2.2
1905	1	1.1
1906	3	3.2
1907	0	0.0
1908	1	.9
1909	1	.9
1910	0	0.0
1911	3	2.3
1912	1	.8
1913	5	3.8
1914	2	1.5

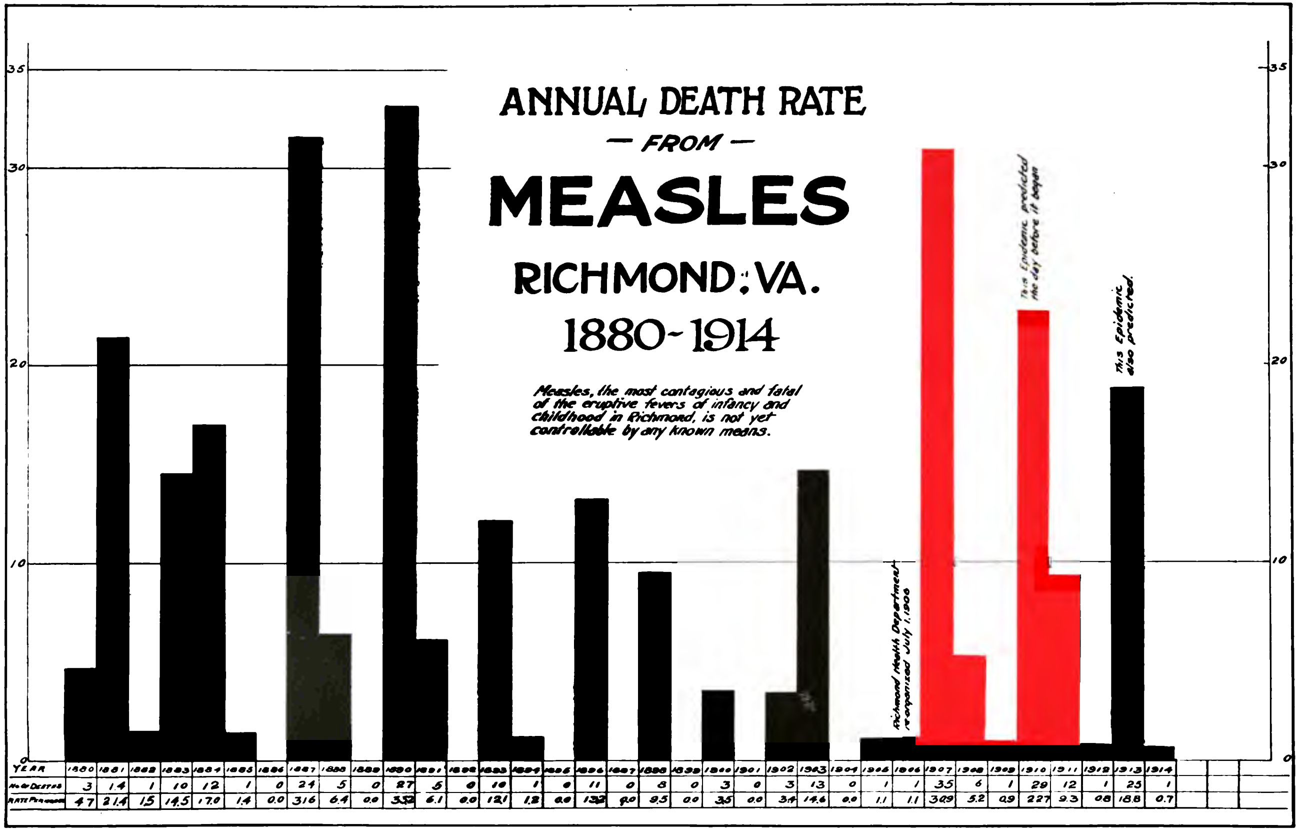
The figures given in the above table are combined in the following table in periods of five years.

PERIOD	AVERAGE ANNUAL MORTALITY FROM SCARLET FEVER	
	Number of Deaths	Rate per 100,000
1872–1874 (3 years)	3.0	5.4
1875–1879 (5 years)	47.4	77.2
1880–1884 (5 years)	4.0	5.9
1885–1889 (5 years)	3.4	4.6
1890–1894 (5 years)	1.4	1.7
1895–1899 (5 years)	2.2	2.6
1900–1904 (5 years)	2.0	2.3
1905–1909 (5 years)	1.2	1.2
1910–1914 (5 years)	2.2	1.7
Entire period of 43 years	7.8	11.7

The figures given in the above table are shown graphically in the following diagram:

Study of the above tables and diagram shows that the above period of 43 years naturally divides itself into three periods, according to the mortality of the disease. During the first of these periods (the 8 years from 1872 to 1879, inclusive) there was an average of 30.8 deaths per year, equivalent to an average annual death rate of 50.3 per 100,000. During the second of these periods (the 7 years from 1880 to 1886, inclusive) the mortality was very much less, there having been an average of 4.9 deaths per year, equivalent to an average annual death rate of 7.0 per 100,000 inhabitants. During the last of these three periods (the past 28 years, from 1887 to 1914, inclusive) the death rate was still further lowered, and for this entire period the average has been the remarkably low figure of 1.7 deaths per year, which is equivalent to an average annual death rate of only 1.9 per 100,000 inhabitants.

If one were to confine one's attention solely to the figures for the past 35 years, and especially for the past 28 years, one would conclude that scarlet fever in Richmond was never likely to be a serious matter. Just why we have had so remarkably low a death rate from this disease it is impossible to say, but the tables and diagram given above show that we must not be misled into believing that Richmond enjoys any peculiar immunity against scarlet fever of a severe and fatal type. The warning given us by what happened in the years 1877, 1878 and 1879 must never be lost sight of. The terrific mortality from scarlet fever in these years must constantly be borne in mind, for whatever conditions were responsible for this mortality may again come about. While we believe that, even were this to happen, our present methods would limit the mortality to figures decidedly lower than in the years just mentioned, it is nevertheless equally certain that no human effort could possibly continue to bring about such low death rates as Richmond has enjoyed for the past three decades if scarlet fever of such a type as occurred here in the three years mentioned should again be introduced into our community.



ANNUAL DEATH RATE
— FROM —
MEASLES
RICHMOND: VA.
1880-1914

Measles, the most contagious and fatal of the eruptive fevers of infancy and childhood in Richmond, is not yet controllable by any known means.

YEAR	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
No. of Deaths	3	1.4	1	10	12	1	0	24	5	0	27	5	0	10	1	0	11	0
Rate Per [illegible]	47	21.4	15	14.5	17.0	1.4	0.0	316	6.4	0.0	352	6.1	0.0	121	1.2	0.0	132	0.0

YEAR	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
No. of Deaths	8	0	3	0	3	13	0	1	1	35	6	1	29	12	1	25	1
Rate Per [illegible]	9.5	0.0	35	0.0	3.4	14.6	0.0	1.1	1.1	309	5.2	0.9	227	9.3	0.8	18.8	0.7

MEASLES.

The year 1914 was an off year for measles, there having been only 167 cases, with 1 death, equivalent to a death rate of .7 per 100,000.

The following table gives the number of deaths and the death rate from measles in Richmond for the past 35 years.

Table Showing the Annual Number of Deaths and the Annual Death Rate from Measles, Richmond, Virginia, 1880-1914.

YEAR	No. of Deaths	Annual Death Rate per 100,000	YEAR	No. of Deaths	Annual Death Rate per 100,000
1880	3	4.7	1900	3	3.5
1881	14	21.4	1901	0	0.0
1882	1	1.5	1902	3	3.4
1883	10	14.5	1903	13	14.6
1884	12	17.0	1904	0	0.0
1885	1	1.4	1905	1	1.1
1886	0	0.0	1906	1	1.1
1887	24	31.6	1907	35	30.9
1888	5	6.4	1908	6	5.2
1889	0	0.0	1909	1	.9
1890	27	33.2	1910	29	22.7
1891	5	6.1	1911	12	9.3
1892	0	0.0	1912	1	.8
1893	10	12.1	1913	25	18.9
1894	1	1.2	1914	1	.7
1895	0	0.0			
1896	11	13.2			
1897	0	0.0			
1898	8	9.5			
1899	0	0.0			

The figures given in the above table are combined in the following table in periods of five years.

PERIOD	Average No. Deaths.	Annual Average Death Rate from Measles per 100,000 Population
1880-1884	8.0	11.8
1885-1889	6.0	7.7
1890-1894	8.6	10.7
1895-1899	3.8	4.5
1900-1904	3.8	4.3
1905-1909	8.8	7.8
1910-1914	13.6	10.7

The figures given in the first of the above tables are shown graphically in the following diagram:

Study of the above tables and diagram shows that measles has not been controlled as have the acute contagious diseases considered in previous parts of this report. It happened that 1914 was a light year, but no special credit for this is claimed by the Health Department. Measles remains the most fatal of the eruptive fevers of infancy and childhood, and while we believe that the methods followed by the Richmond Health Department in recent years have had some little effect in lowering the mortality of this disease, we must frankly confess that its high degree of contagiousness and certain other factors which I have discussed in previous annual reports make measles a disease over which we have not yet gained control.

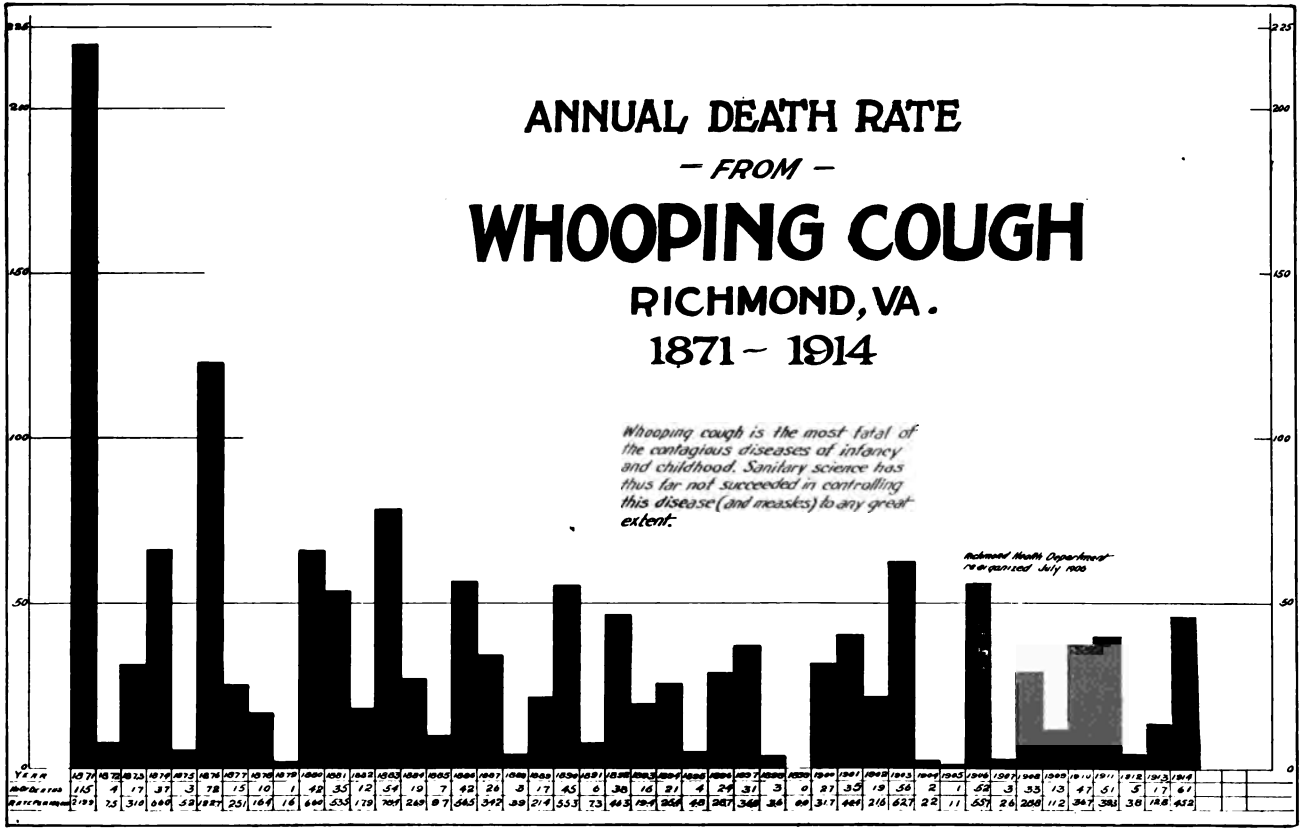
WHOOPING COUGH.

There were 302 cases of whooping cough reported during 1914, with 61 deaths, equivalent to a death rate of 45.2 per 100,000 population. This was by far the most fatal of all acute contagious diseases in Richmond during 1914. The combined death rate from typhoid fever, malarial fever, diphtheria, scarlet fever and measles was only 20.0 per 100,000, in contrast with the above rate of 45.2 for whooping cough alone.

As noted in a number of my previous annual reports, whooping cough is a disease over which we have gained little or no control. The fact is that it is one of the most fatal diseases of infancy and childhood. Heretofore no rigid quarantine has been practised in connection with whooping cough. I have stated the reason for this in other annual reports. So far as I know, there is no community which quarantines this disease.

As a result of the fact stated above, however, I have reached the conclusion that it is entirely illogical to accept any reason for not following the most rigid possible methods in connection with a disease which, so far as Richmond is concerned, is tremendously more fatal than other contagious diseases in which rigid quarantine is practised. I shall certainly, therefore, recommend that hereafter whooping cough be placarded, and that all cases be confined to their homes until the period of contagion is passed. Whether even this will result in lessening the heretofore high mortality from whooping cough cannot be predicted, nor, indeed, will it be possible to tell for quite a period of years whether such quarantine is justified.

This will be better understood after study of the following tables and diagram. The first of these tables gives the annual number of deaths and the death rate per 100,000 population for each of the past forty-four years.



ANNUAL DEATH RATE

– FROM –

WHOOPING COUGH

RICHMOND, VA.

1871 – 1914

Whooping cough is the most fatal of the contagious diseases of infancy and childhood. Sanitary science has thus far not succeeded in controlling this disease (and measles) to any great extent.

Year	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881
No. of Deaths	115	4	17	37	3	72	15	10	1	42	35
Rate per 100,000	219.9	7.5	31.0	66.0	5.2	122.7	25.1	16.4	1.6	66.0	53.5

Year	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892
No. of Deaths	12	54	19	7	42	26	3	17	45	6	38
Rate per 100,000	17.9	79.1	26.9	9.7	56.5	34.2	3.9	21.4	55.3	7.3	44.3

Year	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
No. of Deaths	16	21	4	24	31	3	0	27	35	19	56
Rate per 100,000	19.4	26.6	4.8	28.7	34.9	3.6	0.0	31.7	44.4	21.6	62.7

Year	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
No. of Deaths	2	1	52	3	33	13	47	51	5	17	61
Rate per 100,000	2.2	1.1	55.7	2.6	28.8	11.2	34.7	38.3	3.8	12.8	45.2

Table Showing the Annual Number of Deaths and the Annual Death Rate from Whooping Cough, in Richmond, Virginia, 1871-1914.

YEAR	DEATHS FROM WHOOPING COUGH		YEAR	DEATHS FROM WHOOPING COUGH	
	Number of Deaths	Death Rate Per 100,000		Number of Deaths	Death Rate Per 100,000
1871	115	219.9	1895	4	4.8
1872	4	7.5	1896	24	28.7
1873	17	31.0	1897	31	36.9
1874	37	66.0	1898	3	3.6
			1899	0	0.0
1875	3	5.2			
1876	72	122.7	1900	27	31.7
1877	15	25.1	1901	35	40.4
1878	10	16.4	1902	19	21.6
1879	1	1.6	1903	56	62.7
			1904	2	2.2
1880	42	66.0			
1881	35	53.5	1905	1	1.1
1882	12	17.9	1906	52	55.7
1883	54	78.4	1907	3	2.6
1884	19	26.9	1908	33	28.8
			1909	13	11.2
1885	7	9.7			
1886	42	56.5	1910	47	36.8
1887	26	34.2	1911	51	39.4
1888	3	3.9	1912	5	3.8
1889	17	21.4	1913	17	12.9
			1914	61	45.2
1890	45	55.3			
1891	6	7.3			
1892	38	46.3			
1893	16	19.4			
1894	21	25.4			

The following table gives the average annual number of deaths and the average annual death rate per 100,000 inhabitants from whooping cough in five-year periods.

PERIOD	AVERAGE ANNUAL MORTALITY FROM WHOOPING COUGH	
	Number of Deaths	Rate per 100,000
1871-1874 (4 years)	43.2	81.1
1875-1879 (5 years)	20.2	34.2
1880-1884 (5 years)	32.4	48.5
1885-1889 (5 years)	19.0	25.1
1890-1894 (5 years)	25.2	30.7
1895-1899 (5 years)	12.4	14.8
1900-1904 (5 years)	27.8	31.7
1905-1909 (5 years)	20.4	20.0
1910-1914 (5 years)	36.2	27.6

Average number of deaths from whooping cough for each year since 1871 .... 26.5

Average death rate per 100,000 from whooping cough for each year since 1871 .... 34.6

The death rates given in the first of the above tables are shown graphically in the following diagram.

A number of exceedingly interesting points are brought out in the above tables and diagram. In the first place, it is evident that a disease which has claimed an average of 26.5 victims a year for the past forty-four years—equivalent to 34.6 deaths per 100,000 inhabitants—is worthy of very serious consideration. In contrast to these figures, scarlet fever has caused an average of 7.8 deaths a year—equivalent to 11.7 deaths per 100,000—for the past forty-three years, while for the past twenty-eight years the average annual number of deaths from scarlet fever in Richmond has been only 1.7—equivalent to 1.9 deaths per 100,000 inhabitants. Comparison of the death rate from whooping cough with that of diphtheria (formerly its nearest rival) and measles (its nearest rival in recent years) shows the real magnitude of the problem which whooping cough presents.

The diagram does not convey an adequate idea of the high death rate from whooping cough in comparison with these other diseases. This is due to the fact that, in making these diagrams, the scale for the various diseases cannot be kept the same. In each diagram the full space at our disposal is used for the year of highest mortality. As whooping cough had the highest rate of any of the diseases shown (219.9, in 1871) this necessitated a smaller scale than, for example, with measles, the highest rate for which was 33.2, in 1890. A hasty glance at the two diagrams therefore creates the impression that measles has in recent years had a much higher death rate than whooping cough, an impression which closer study corrects.

This most fatal of all the contagious diseases of infancy and childhood must be dealt more vigorously with in the future. In addition to more rigid quarantine, inquiry must be made into the possibility of lessening the number of cases by the employment of whooping cough vaccine. The bacillus of this disease is now known, and a protective vaccine is obtainable. That this can be used in individual cases to prevent the development of the disease in those exposed to it seems to be established. But just to what extent it is possible to use this vaccine for obtaining results on a large scale has not yet, so far as I know, been determined. Here is a field for investigation. To suggest that all infants be vaccinated against whooping cough would appear to be going a little too far. Our own figures for a number of years show, however, that the greatest mortality from this disease is in the first year of life. If the protection afforded by the vaccine lasts only one year, an infant vaccined during its first year would at least have its attack deferred until a time when it would be far less likely to succumb to the disease if contracted.

Then, again, there is prepared from the whooping cough bacillus a curative remedy. This is usually made not only from the whooping cough bacillus but also from other organisms—the pneumococcus and the pyogenic streptococci and staphylococci—as well. Results so far secured with this preparation seem to be encouraging. If confirmed by further experiene, it is likely that the Health Department will find it advisable to distribute this as is now done with diphtheria antitoxin. Altogether it is to be hoped that means will be found to lessen the ravages of this disease.

As stated early in the discussion of whooping cough, it will not be possible to determine the real value of any policies adopted by us until after a period of several years. The tables and diagram above given show

how greatly the mortality of this disease varies from year to year, and, since it is necessarily impossible to foretell what would have been the mortality in any given year if nothing had been done, it is manifestly improper to attribute low mortality in any year, or even in a short period of years, to any policies which have been in force. For example, if vigorous policies against whooping cough had been put in force in 1898, it would have appeared that they were most successful, as there were only 3 deaths from this disease in that year and not a single death in the following year. Similarly, there were only 2 deaths from whooping cough in 1904 and 1 in 1905.

In spite of all these difficulties, it is clearly our duty to do everything possible to lower the frightful mortality of whooping cough—to take advantage of every known means to prevent its occurrence and lessen its fatality.

SMALLPOX.

The report of our Medical Inspector, Dr. Summers, goes so fully into the history of smallpox in Richmond during 1914 that it is unnecessary for me to add anything to what he has there stated.

TYPHUS FEVER.

Two of the cases reported to this Department as typhoid fever during the year 1914 turned out to be genuine cases of typhus fever, or, at any rate, of the mild form of this affection known as Brill's disease. In one of these cases the diagnosis was confirmed by an official from the United States Public Health Service, as well as the State Board of Health. Both cases were promptly reported when our suspicions were aroused.

In addition to these two cases there was, just a few weeks before, another case which appeared to us very suggestive of typhus fever, but Dr. Goldberger, of the United States Public Health Service, whose experience with typhus fever is very extensive, did not regard the case as one of this disease.

We have come to learn in the past few years that typhus fever, or Brill's disease, is by no means uncommon in American communities. While up to a few years ago the presence of a case of this disease in any city would have resulted almost in a panic, this is no longer the case. The very fact that we have apparently been having in this country for a number of years a mild form of typhus fever without its having caused any epidemic, or any great loss of life so far as we know, without, indeed, its having been recognized at all until quite recently, shows that we need not greatly fear this disease merely on account of its name having been always associated with great epidemics. On the other hand, we should not be deluded by the knowledge that it can be present in so mild a form into a false sense of security and consequent neglect of all precautions to prevent contagion. Since the spread of typhus fever is now known to be due to infected body lice, we are well prepared to safeguard those who come in contact with cases. It must be stated, however, that no history of body lice could be obtained in any one of our cases in 1914.

TUBERCULOSIS.

There were 247 deaths (83 white and 164 colored) from consumption during 1914. This was equivalent to a death rate of 183.1 per 100,000 for the entire population, which, with the single exception of the year 1913 (when the rate was 160.7) was the lowest rate ever recorded for Richmond. The white death rate from consumption was 97.1, while the colored rate was 331.9, or 3.41 times the white rate. It is thus seen that our death rate from consumption is high on account of our large negro population and their high death rate from this disease.

In a paper which I read last December, at the Jacksonville meeting of the American Public Health Association, I directed attention to the fact that southern cities might have lower death rates for both their white and their colored population and yet have higher total death rates, on account of the large proportion of colored population in southern cities. For example, Richmond had a lower white death rate from consumption than Boston had in 1911, 1912 and 1913. The colored death rate from this disease was also lower in all three years. Yet in each of these years Richmond, with its 37 per cent. of colored population had decidedly a higher death rate from consumption for her entire population than had Boston, with a colored population of a little over 2 per cent.

If Richmond had only 5 per cent. colored population, then, with a white death rate from consumption last year of 97.1 and a colored rate of 331.9, her total rate would have been only 108.8, instead of 183.1.

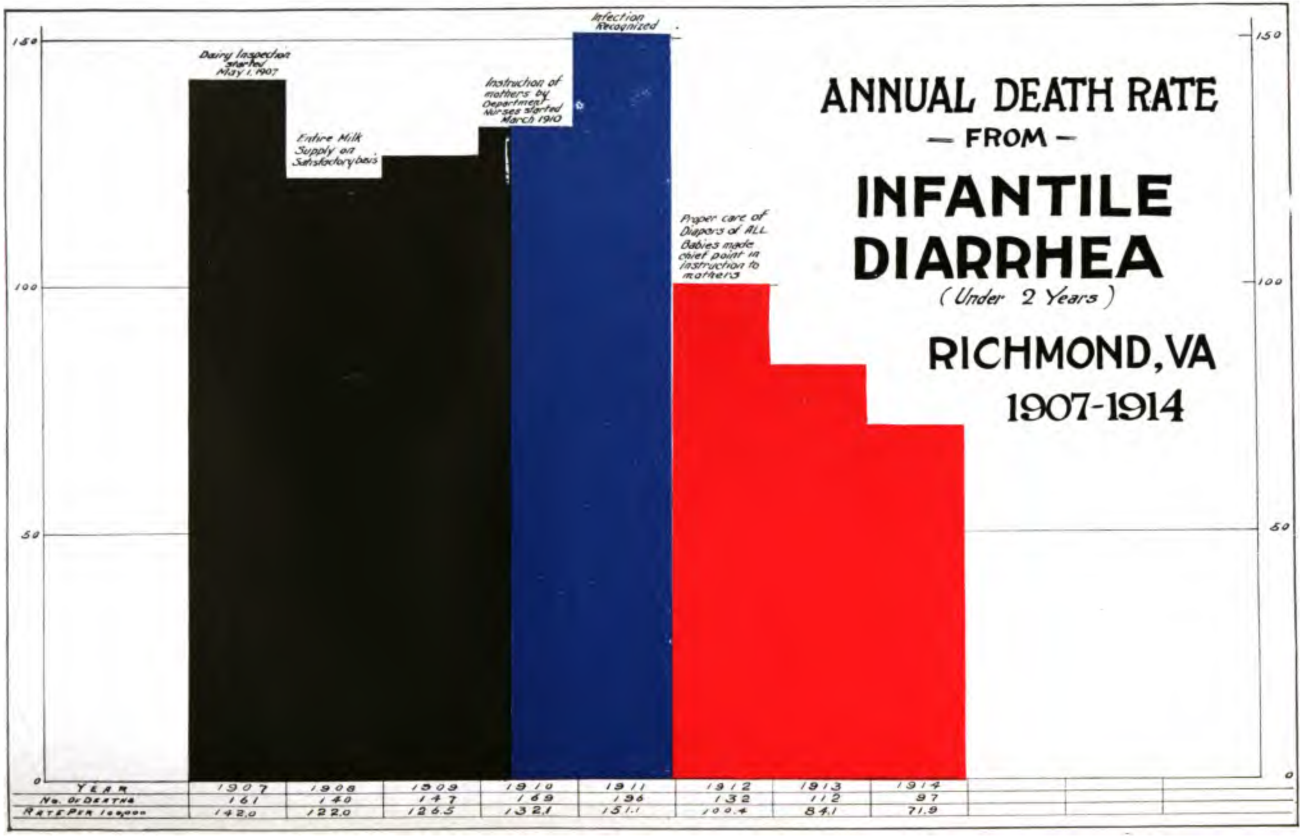
In considering Richmond's death rate from consumption, it is only fair to note that there were 27 deaths (all white) from this disease at Pine Camp during 1914. This institution receives white consumptives from Richmond, most of them in advanced stages of the disease. Being outside of the city limits, deaths occurring there are not included in our tables. It is by no means certain that all 27 of these persons would have died in Richmond but for Pine Camp. Had they all died in Richmond, our death rate from consumption would have been 203.1. There were 8 deaths from consumption among nonresidents during 1914. These, of course, are included in our tables. Obviously, no city can include both nonresidents who die in the city and the city's own people who die outside of the city. The accepted rule of statistical practice is to include the former and not the latter.

PINE CAMP.

It is always a pleasure in my reports to refer to the work which is being done for white consumptives at Pine Camp. The thirty-four beds there, all of which are absolutely free, do an immense amount of good. During 1914 it appeared that this institutiton might have to close down on account of lack of funds, due to the financial depression and the consequent difficulty in getting private subscriptions for this work. The City Council, however, came to its relief and the trouble was tided over.

NEED FOR INSTITUTION FOR COLORED CONSUMPTIVES.

The greatest need of Richmond to-day in connection with tuberculosis is an institution for the segregation and treatment of colored consumptives.



YEAR	1907	1908	1909	1910	1911	1912	1913	1914
No. of Deaths	161	140	147	169	196	132	112	97
Rate per 100,000	142.0	122.0	126.5	132.1	151.1	100.4	84.1	71.9

The death rate among negroes is over three times as high as among the whites, yet, aside from a few beds at the City Home (the euphemistic title of our Almshouse), there is no provision for bedridden colored consumptives. Such an institution is badly needed, not only for the sake of these cases themselves but also for the protection of our white citizens.

Our white and colored tuberculosis dispensaries continued to do good work during 1914. The work showed a decided improvement over previous years. The plan of having our own nurses is working well. The two dispensaries are not only doing an immense amount of good in themselves but the white dispensary serves as an indispensable means of locating proper cases for Pine Camp. For details of the work of these dispensaries I refer you to the reports of the chiefs of clinic and our head nurse. Again I wish to thank those physicians who have served without compensation as assistants at these dispensaries.

INFANTILE DIARRHEA.

There were 97 deaths from infantile diarrhea (under two years) in 1914, equivalent to a death rate of 71.9 per 100,000 inhabitants. Both the number of deaths and the death rate were by far the lowest ever known in Richmond. Of all the accomplishments of the Richmond Health Department since I went into office, I regard this as the most important.

Reference to the diagram which shows the annual death rate from infantile diarrhea in Richmond makes plain the very marked decline in the death rate from this disease in Richmond for the past three years. Reliable statistics for the years prior to 1907 are not available, or, rather, to get them would involve going back to the original certificates of death, and we have no one in the office with time enough to do this.

Considering only the statistics for the past eight years, we are dealing with a period during nearly all of which the milk supply has been on a very satisfactory basis. Dairy inspection started in May, 1907, and within a few months the worst conditions had been very greatly improved. In March, 1910, three instructing nurses were employed by the Department, and in 1912 this force was increased to five nurses, whose time is divided between tuberculosis work and work for the prevention of infant mortality. I have described the nature of their work in previous reports.

The diagram shows that the death rate from infantile diarrhea apparently increased steadily from 1908 to 1911, in spite of all that was done. It is, of course, entirely possible that there may have been some actual increase, since it is well known that there is a formal fluctuation in the death rate from almost all diseases from year to year. If there was any such increase, it can only be said that this increase would have been far greater but for the work that was done, as investigation of every fatal case of infantile diarrhea, since the summer of 1908, failed to bring to light a single instance in which the cause of the disease could be attributed to our general milk supply, while, on the other hand, we found many cases in which the trouble was beyond question caused by milk from some neighbor's cow, not under our supervision, hence carelessly kept and producing in consequence dangerous milk. Since unsupervised milk supply is believed to be one of the very important causes of infantile diarrhea, and since our general milk supply did not cause a single death from this disease during the years under discussion, it is plain that, even in 1909, 1910 and 1911, our supervision of the milk supply saved many infant lives. It is certain that the work of our nurses in 1910 and 1911 saved even more.

But it is far more probable that the death rate from infantile diarrhea during these years was in fact not only not higher than in previous years but was actually lower. It is a well known fact that many diseases of infants are accompanied by diarrhea. Furthermore, in many instances, the real nature of such illness is not ascertained by the attending physician. The Richmond Health Department began in 1909 to direct the attention of the medical profession and the public to the prevention of infantile diarrhea. The subject was discussed very freely and attracted a great deal of attention. It is a fact that, under these circumstances, many deaths, due to diseases the nature of which is obscure and which are accompanied by some diarrhea, will be attributed to diarrhea. I am strongly inclined to believe that this is the explanation of the apparent increase in the death rate from infantile diarrhea.

The work of our nurses was unquestionably the means of saving the lives of many babies. Case after case came to their hands in which a feeble baby had an ignorant mother under whose care the baby would almost certainly have died, but by the instruction and the actual demonstrations given by the nurses many of these babies were saved.

In 1911 I became convinced that, beyond all question, infection played the most important role in the causation of infantile diarrhea of a fatal type in Richmond. I have elsewhere discussed the data on which this conclusion was reached. This has, of course, been suggested by others, but never in as forceful a manner as it should be. But, so far as I know, it has never been suggested that we might have to deal with "carriers" of infantile diarrhea, that is, with persons (babies or others, but chiefly babies) who, though not themselves suffering with diarrhea, nevertheless harbor the germs in their intestines and throw them off in their stools. Once these facts are realized, it becomes apparent that we must see that the bowel discharges of *all* babies, sick and well, are properly cared for and not allowed to become the means of giving diarrhea to others.

Having reached these conclusions late in 1911, the Department nurses were told that, in their instructions to mothers, they were to emphasize the care of the diaper, above all other things. Of course it was too late for this to have any effect in 1911. But the effect became apparent the following year (1912) when the death rate from infantile diarrhea dropped to 100.4, the lowest rate up to that time. In 1913 it fell to 84.1, and in 1914 to 71.9.

I wish to make it plain that I do not rely on the lower death rate from infantile diarrhea to prove the correctness of the deduction that the heretofore unconsidered fecal matter of a community which is deposited in the diapers of babies is the most important single cause of fatal infantile diarrhea and that proper attention to this will greatly lessen the mortality of this disease. The deduction is so absolutely natural, it follows so completely what we now know about typhoid fever, that I would be positive of its correctness even though the death rate from infantile diarrhea in Richmond had not dropped significantly when measures were put into effect which it was hoped would bring results. The fecal matter of a community is not completely looked out for merely by complete sewerage of that community. A considerable part of this is the bowel discharges of babies, and, even though a city is one hundred per cent. sewered, this portion of it does not go into the sewer directly. Its immediate destination is the diapers, and unless these are cared for properly, there will still be spread of intestinal troubles, especially among infants.

This is self evident and needs no proof. Every sanitarian knows that human discharges are a menace to human beings. I am certain that in bringing out the above facts the Richmond Health Department is doing more than merely saving the lives of babies in Richmond. The adoption of our plan by other places will follow, and I am confident that such places will get correspondingly good results. I have discussed this subject more fully in papers read during 1914—in June before the American Medical Association and in November before the Southern Medical Association.

COMPARATIVE MORTALITY OF THE WHITE AND COLORED RACES.

I have in each of my annual reports presented a table showing the relative mortality of the white and colored races. This subject is one the interest of which can never be exhausted. As usual, the mortality of the colored race in Richmond during 1914 was greatly in excess of the white mortality. In fact, the excess was even more pronounced than in previous years. The colored death rate was 82 per cent. greater than the white when all deaths were included and 99 per cent. greater with deaths among nonresidents of both races excluded.

The colored race, constituting 37 per cent. of our total population, had 1,362 deaths, while the white race, constituting 63 per cent. of our population, had 1,296 deaths. The figures with nonresidents excluded were 1,285 and 1,117 respectively.

The colored death rate from typhoid fever has in previous years been lower than the white rate, but in 1914 the colored rate was 2.37 times as great as the white rate.

The greatest excess in the colored death rate as compared with the white rate was in connection with tetanus, where the colored rate was 16.83 times as great as the white rate. This great excess was not due entirely to tetanus of the new-born, as there were only 5 deaths from tetanus under one year.

As usual, the colored death rate from consumption was much higher than the white rate, having been 3.42 times as great. In this connection, however, it must be remembered that the white death rate from consumption in the past few years has been decidedly lowered by reason of the deaths which occurred at Pine Camp, outside of the city limits, where only white patients are received. As mentioned elsewhere in this report, there were 27 deaths at Pine Camp during 1914. If all of these deaths had occurred in the city of Richmond, the colored rate would still have been 2.57 times as great as the white rate.

It is interesting to note that the colored death rate from infantile diarrhea was only 1.56 times as great as the white rate. The excess in previous years has been much greater. It is also interesting to note that the colored death rate from this disease was only 93.1 per 100,000. Only in the last two years have we succeeded in getting the total death rate from infantile diarrhea under 100. It is interesting to note that in 1914 the colored death rate was reduced below 100.

Many other points of interest are brought out in the following table:

Table Showing Comparative Mortality of the White and Colored Races from Certain Causes in Richmond, Virginia, During 1914.

CAUSE OF DEATH.	No. of Deaths.		Death Rate per 100,000.*		Ratio of Colored Death-rate to White.
	White	Col'd	White	Col'd	
Typhoid fever:					
Including non-residents	8	11	9.4	22.3	2.37
Residents only	7	8	8.2	16.2	1.98
Malarial fever	0	1	....	2.0	....
Measles	1	0	1.2	....	....
Scarlet fever	2	0	2.3	....	....
Whooping cough	17	44	19.9	89.0	4.47
Diphtheria (including croup)	3	1	3.5	2.0	.57
Influenza	16	9	18.7	18.2	.97
Dysentery	6	5	7.0	10.1	1.44
Tetanus	1	10	1.2	20.2	16.83
Pellagra	17	6	19.9	12.1	.61
Consumption	83	164	97.1	331.9	3.42
Other forms of tuberculosis	32	17	37.4	34.4	.92
Syphilis	10	22	11.7	44.5	3.80
Cancer (of all organs):					
Non-residents included	89	36	104.1	72.8	.70
Residents only	70	29	81.9	58.7	.72
Diabetes	12	2	14.0	4.0	.29
Apoplexy	97	74	113.4	149.7	1.32
Other diseases of the nervous system	58	37	67.8	74.9	1.10
Organic heart disease	134	126	156.7	255.0	1.63
Bright's disease	114	84	133.3	169.9	1.27
Heart and Bright's disease combined	248	210	290.0	424.9	1.46
Pneumonia (lobar or unqualified)	36	86	42.1	174.0	4.13
Bronchopneumonia	33	89	38.6	180.1	4.67
Lobar and bronchopneumonia combined	69	175	80.7	354.1	4.39
All diseases of the respiratory system (consumption not included); that is, Group IV of the International Classification	93	237	108.7	479.5	4.41
Diarrhea (under 2 years)	51	46	59.6	93.1	1.56
Diarrhea (over 2 years)	14	13	16.4	26.3	1.60
Appendicitis:					
Including non-residents	12	13	14.0	26.3	1.88
Residents only	3	9	3.5	18.2	5.20
Diseases of the puerperal state	21	25	24.6	50.6	2.06
Congenital debility	75	79	87.7	159.9	1.82
Senile debility	11	8	12.9	16.2	1.26
Legal electrocution	0	9	....	18.2	....
Suicide	14	0	16.4	....	....
All other violent deaths	94	93	109.9	188.2	1.71
Ill-defined or unknown	11	34	12.9	68.8	5.33
Total deaths, all causes:					
Including non-residents	1,296	1,362	1,516	2,756	1.82
Residents only	1,117	1,285	1,306	2,600	1.99

*All rates in this table are calculated from the official figures of the U. S. Bureau of the Census for the 1914 mid-year population. These figures are: White, 85.498; colored, 49,419.

Only one of the 9 criminals electrocuted in 1914 was a resident of Richmond and committed in Richmond the crime for which he was legally electrocuted.

AVERAGE AGE AT TIME OF DEATH.

The average age at time of death of all who died in Richmond during 1914 was 36 years, 5 months and 16 days. The average age of white decedents was 43 years, 4 months and 10 days; of colored decedents, 29 years, 10 months and 28 days.

The average age at time of death was 21 days less than in 1913. For white decedents the average age at time of death was 1 year and 10 days greater than in 1913, while for colored decedents it was 4 months and 2 days less than in 1913.

In previous annual reports I have clearly indicated that the significance of the average age at death is quite limited. It has some usefulness when considered in the same community year by year, but beyond this it amounts to little.

BIRTHS.

There were 3,155 births reported to the Health Department during 1914. Of these, 1,965 were white (1,019 males and 946 females) and 1,190 were colored (607 males and 583 females). There were 47 more white births reported than in 1913, but 27 fewer colored births, making a net gain of 20 more births than reported in 1913.

Although the total number of births was greater in 1914 than in any previous year, the birth rate was slightly lower than in 1913, and decidedly lower than in 1908 and 1909. The white birth rate was 22.98 per 1,000 inhabitants, against 22.73 in 1913; the colored rate was 24.08, against 24.95 in 1913, and the total rate was 23.38, against 23.54 in 1913. The slight increase in the white birth rate was more than offset by the decrease in the colored rate.

There is reason to believe that, as in previous years, not every birth is reported to the Department. A considerable proportion of the certificates of birth which are secured for our records are obtained only after locating babies whose births are not recorded with us and then getting the physician or midwife to furnish us with a certificate of birth. Since the State law requiring the reporting of births went into effect there has been some improvement in Richmond as far as getting reports from doctors and midwives without our first locating the babies ourselves. Dr. Plecker, State Registrar of Vital Statistics, is indefatigable in his efforts to arouse doctors and midwives to doing their duty. His system of sending a registration card to the mother of every legitimate baby whose birth is reported has a good effect. While it is true that all this has resulted in our getting reports with somewhat less difficulty than formerly, it has not brought about any increase in the reported birth rate of Richmond. I am inclined to believe that the deficiency in our reports of births is decidedly less than I had before thought.

The following table gives the number of births reported to the Richmond Health Department and the corresponding birth rate per 1,000 inhabitants for each year since 1900, when the ordinance requiring the reporting of births went into effect.

Year	Number of Births Reported.	Reported Birth-Rate per 1,000.
1900*	818	9.61
1901	729	8.42
1902	752	8.55
1903	666	7.46
1904	636	7.02
1905	608	6.61
1906†	1,133	12.13
1907	2,311	20.37
1908	2,806	24.44
1909	2,839	24.44
1910	2,734	21.37
1911	2,940	22.66
1912	3,069	23.35
1913	3,135	23.54
1914	3,155	23.38

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*The present ordinance requiring the reporting of births went into effect in 1900.

†Health Department reorganized July 1, 1906.

The rates given in the above table for the years 1911, 1912 and 1913 are slightly lower than given in the annual reports for those years. This is due to revised estimates of population sent out by the United States Bureau of the Census after the 1913 annual report was written.

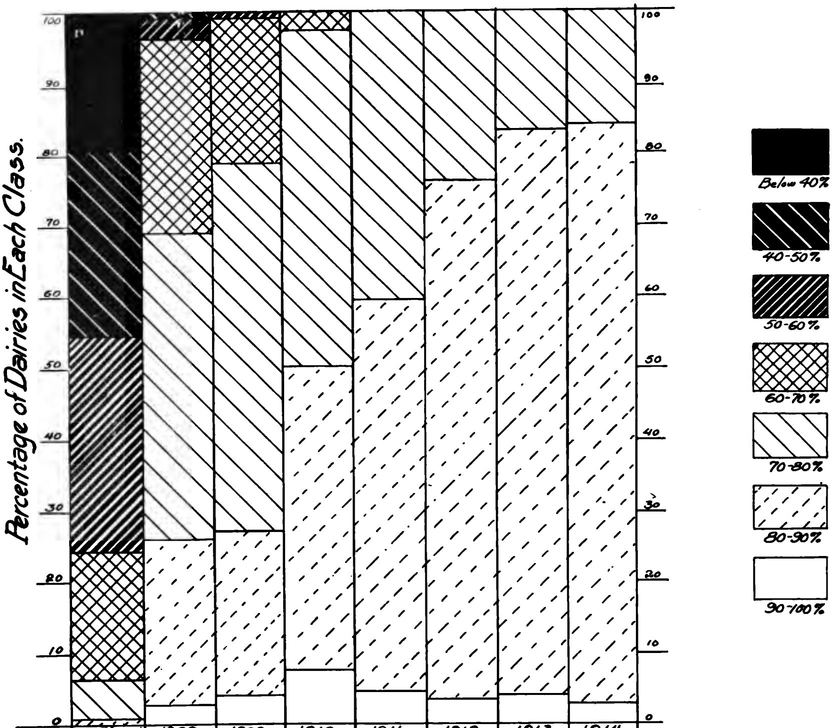
MILK SUPPLY.

During the year 1914 our work for the safeguarding of our milk supply was conducted as in the immediately preceding years. The average score of all dairy farms was 82.8, exactly the same as in 1913. Although this does not in itself show any advance, the significance of the figures must not be misunderstood. I have in many previous reports directed attention to the fact that when a dairy farm scores well in the 80's it is not practicable for any department of health to insist on further advance, unless, of course, the deficiency is in cleanliness or other matters of prime importance. A score above 85 means special ambition and labor on the part of the dairyman to have a place above what can be insisted on from a health standpoint.

As previously predicted, the tendency is to have eventually all dairy farms in the 80 to 90 class, except those few instances in which the owner or manager wishes to have a place beyond what we can properly require of him.

I have heretofore given in my annual reports a table showing the scores of dairy farms month by month for each year since dairy inspection was started by the Health Department, in May, 1907. The number of years is now so great that this table, in its previous form, is too long. I am therefore giving only the monthly table for the year 1914 and a table showing results by years. Any one wishing the monthly tables from 1907 to 1913, inclusive, can get them from previous reports.

DIAGRAM SHOWING IMPROVEMENT IN
DAIRY SCORES
DURING EIGHT YEARS OF DAIRY INSPECTION
1907-1914
HEALTH DEPARTMENT RICHMOND, VA



YEAR	1907 (8 mos)	1908	1909	1910	1911	1912	1913	1914
TOTAL NO. OF SCORES	520	846	1000	1066	1220	1250	1360	1340
AVERAGE SCORE	50.4	74.1	75.8	80.5	81.3	82.5	82.8	82.8

Table Showing the Percentage of Dairy Farms in the Various Classes for Each Month During 1914.

CLASS	PERCENTAGE OF ALL DAIRIES INSPECTED FOR THE MONTH WHICH FELL IN EACH CLASS DURING 1914											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Scoring 70-80	14.9	16.0	17.8	16.9	17.4	20.6	17.2	20.0	21.9	15.2	17.6	12.5
Scoring 80-90	81.6	81.0	78.7	78.2	79.3	78.4	81.2	79.0	75.4	81.9	78.4	84.8
Scoring 90-100........	3.5	3.0	3.5	4.9	3.3	1.0	1.6	1.0	2.7	2.9	4.0	2.7
Average of all scores for the month	82.9	82.7	82.8	53.6	82.5	82.1	82.3	82.3	82.4	82.7	82.8	83.3

The following table classifies the dairies, according to their scoring, by years, since the Richmond Health Department began dairy inspection on May 1, 1907.

Table Showing the Percentage of Dairy Farms in the Various Classes, from May, 1907, *Through December*, 1914—*Summary by Years.*

CLASS	PERCENTAGE OF ALL DAIRY FARMS INSPECTED DURING THE YEAR WHICH FELL IN EACH CLASS							
	Year							
	1907	1908	1909	1910	1911	1912	1913	1914
Scoring below 30	6.0	....	....	....	....	....	....	....
Scoring between 30 and 40....	13.2	....	....	....	....	....	....	....
Scoring between 40 and 50....	26.3	.2	....	....	....	....	....	....
Scoring between 50 and 60....	30.1	3.2	.3	....	....	....	....	....
Scoring between 60 and 70....	18.3	27.6	20.8	2.5	....	....	....	....
Scoring between 70 and 80....	5.2	43.1	51.7	47.4	40.4	23.8	17.0	16.9
Scoring between 80 and 90....	.9	23.1	23 1	42.4	55.2	72.9	79.2	80.2
Scoring between 90 and 100....	....	2.8	4.1	7.7	4.4	3.3	3.8	2.9
Average of all scores for the year................	50.4	74.1	75.8	80.5	81.3	82.5	82.8	82.8

The figures given in the above table are shown graphically in the following diagram.

TUBERCULIN TESTING.

In April, 1913, the Board of Health adopted a rule requiring that on and after May 1, 1913, every new shipper of milk or cream into Richmond would have to show that his entire herd was free from tuberculosis, as demonstrated by the tuberculin test, and the same requirement would apply to all new cows added to old herds.

On March 30, 1914, the Board of Health adopted a rule that on and after September 1, 1915, all milk and cream coming into Richmond must be from herds free from tuberculosis, as shown by the tuberculin test applied within the preceding twelve months and at least annually thereafter.

In the work which has been done by the Richmond Health Department for the sanitary improvement of the milk supply, nothing has been adopted in a haphazard way. The work has proceeded in accordance with a well worked out plan. It was felt that the most important things to be done, from the standpoint of the health of the people, were to get rid of the dangers of dirty milk and to minimize the dangers of specific infection with the organisms of certain human diseases which are at times conveyed by milk, namely, typhoid fever, diphtheria, scarlet fever, and, probably, intestinal infections other than typhoid fever.

It is almost universally believed by sanitary authorities that ordinary dirty milk is the most prolific cause of infantile diarrhea. So well have we advanced in getting clean milk that almost one-half of the entire number of samples examined last year contained less than 10,000 bacteria per cubic centimeter. This has been accomplished by the most rigid system of inspection. Our dairy farms are to-day, according to the universal testimony of many experts who have seen for themselves what we have accomplished, the best supplying milk to any city of anything like the size of Richmond. This makes cleanliness easy of attainment. While it is possible to produce milk of low bacterial content in barns which are far from sanitary, either in their construction or in their upkeep, it is nevertheless far less likely that clean milk will be produced under such conditions than under conditions such as we have brought about.

Regarding protection from the organisms of the human diseases above mentioned, our rules require the immediate reporting of any case of typhoid fever, diphtheria, scarlet fever, or any other contagious disease on a dairy farm. This has been well lived up to by our dairymen.

Of course no system of reporting recognized cases of contagious diseases can ever completely protect a milk supply against these diseases, because of the existence of unrecognized cases and "carriers." But even against these a great measure of protection is gained by the degree of cleanliness insisted on by us. For example, even though a typhoid carrier milks the cows, the danger of his infecting the milk is minimized by the fact that all milkers are required to wash their hands thoroughly before milking and at frequent intervals during milking. No man would ever, on any of our dairy farms, go to stool and then milk cows without thoroughly washing his hands.

This same protection is given to a great extent against bovine tuberculosis. We have always insisted on the removal from our dairy herds of all animals visibly affected with tuberculosis, especially tuberculosis of the udder. In this way a considerable proportion of cows have been removed from the herd when in condition to discharge tubercle bacilli in their milk. Of those animals affected with tuberculosis of such location or degree as not to be detected in this way, many are not throwing off tubercle bacilli at all or else chiefly in their dung. The degree of cleanliness on which we insist—and which the low bacteria counts show that we are actually attaining—minimizes the amount of manure which gains entrance to the milk and hence decidedly limits the number of tubercle bacilli which get into it, even from animals which are giving off these organisms from their intestines. When, therefore, we speak of the clean milk supply which Richmond gets, it must be clearly understood that this means far more than a mere concession to decency. It means a considerable degree of protection against contamination with the bacteria of human diseases which may be present in those who handle the milk at its various stages of production and distribution, and also a considerable degree of protection against bovine tuberculosis. More than this, if ordinary dirty milk is the greatest of all causes of infantile diarrhea, it means very great protection from this, the greatest of all dangers connected with an unsupervised milk supply.

SAFE RAW MILK.

Our systematic policy has been to furnish Richmond with as safe raw milk as it is humanly possible to get for any city of our size. From what has been said above, it must be evident that there are risks which can be reduced to a minimum, but which can never be entirely done away with. When, after the first of September, our entire milk supply will come from tuberculin tested herds, our milk will be as safe as raw milk can ever be made. Authorities differ considerably as to whether any raw milk supply can be safeguarded to such a degree as to make it a proper supply. Some consider the risks so great that they regard pasteurization as always necessary, in spite of all else that may be done. The arguments pro and con are almost endless.

In Richmond we have had dairy inspection since May 1, 1907. For the same length of time—nearly eight years—we have had very complete reporting of all cases of contagious disease and immediate investigation of every case by our Medical Inspector. We know, therefore, just what to charge against our milk supply. In August, 1908, there were seven cases of diphtheria traced to the milk of a certain dairyman. The supply was shut off immediately, until we could determine where the trouble lay. It was found that this dairyman and one of his negro helpers had diphtheria bacilli in their throats. The helper was discharged and the dairyman kept away from his dairy until the bacilli disappeared. No further cases developed.

As stated elsewhere in this report, every fatal case of infantile diarrhea has been investigated since the summer of 1908, and for the past three years (since this disease has been made reportable) every case has been investigated. In no instance have we had reason to attribute to our general milk supply any infantile diarrhea.

To have had only a single small group—seven cases—of diphtheria as the sole charge against our milk in nearly eight years, and this six and a half years ago, is a record which speaks for itself.

It is not possible in this report to go into all the arguments for and against pasteurization. We fully recognize the risks which are inseparable from a raw milk supply. The real questions are whether these risks, after being reduced to a minimum, are still great enough to require pasteurization; whether pasteurization will surely protect against these risks, and whether the objections against pasteurization of the entire milk supply of a city do not more than offset its advantages even though it accomplishes all that is claimed for it.

Speaking plainly, we feel that there are advantages and disadvantages on both sides. We feel, furthermore, that if Richmond, with a milk supply the excellence of which is recognized by all who have looked into it, should resort to compulsory pasteurization it would be equivalent to saying that no city can ever so safeguard its milk supply as to make it safe for human consumption without pasteurization. At the present time a considerable proportion of our milk supply is pasteurized, by the choice of the dairymen. Every person has it thus in his power to get either raw milk or pasteurized milk, whichever he may prefer or which ever his physician may wish him to have. This, we believe, is the best solution of this much-debated question.

For many additional matters of interest in connection with our milk supply, I refer you to the excellent report of our Dairy Inspector, Mr. T. J. Strauch. This report again exhibits Mr. Strauch's practice of looking into many matters which are not commonly considered by dairy inspectors, or, indeed, by health departments. These matters are, however, of great interest to dairymen. Our efforts are always to have this work of a constructive character, thus making the dairy inspector not simply a man who comes on the dairy farm to detect the dairyman's shortcomings, but a man who is a welcomed advisor, from whom the dairyman can get valuable information, both of a general character and suited to his special needs.

INFANT MORTALITY.

Our work for the prevention of infant mortality has been referred to in part elsewhere in this report. There were 509 deaths of infants under one year against 508 in 1913. While it is disappointing that the *number* of deaths was not again lessened, it must nevertheless be pointed out that the death *rate* for infants under one year was lower than in any previous year. Of the 61 deaths from whooping cough, 31 were under one year of age. This is the chief cause for our not showing a diminution in the number of infant deaths.

The report of our Head Nurse, Miss Moore, gives details of the most important work done for the prevention of infant mortality. The number of babies under supervision was larger than in previous years and the results obtained were excellent.

ANNEXED TERRITORY.

On November 5, 1914, the City of Richmond annexed about thirteen square miles of new territory, on both sides of James river, to its previous area of about eleven square miles, thus more than doubling its former size. The population of the new territory is roughly estimated as 18,000, thus making the present population of Richmond about 155,000 (in 1915).

This is the third annexation of new territory since the Health Department was reorganized in 1906. The first of these was in December, 1906, when about five square miles of territory, to the east and west of the city, were added to about an equal area comprising the old city. In April, 1910, Manchester was annexed, adding another square mile. The city has thus, in nine years, increased its area from five square miles to about twenty-four square miles.

Annexation of so considerable an area necessarily introduced many new problems.

Regarding our vital statistics for 1914, it seemed to me desirable not to have these cover a different area and population for the first ten months (approximately) and the last two. An agreement was, therefore, reached with the United States Bureau of the Census and the State Registrar of Vital Statistics whereby Richmond's vital statistics for 1914, as published by the Federal and State authorities, as well as by the Richmond Health Department, will include only deaths and births which occurred in the old area.

Deaths which occurred in the annexed territory between November 5 (the date of annexation) and the end of the year are given in a special table.

The annexed territory comprises a number of heretofore suburban developments and a considerable rural section. Of the suburban developments, some, such as Ginter Park, Highland Park, Barton Heights and Woodland Heights, are made up of very attractive dwellings, all, or nearly all, of which have sewer and water services. Other sections, such as Forest Hill, are very attractive so far as the general class of the houses are concerned, but have neither public sewers nor public water supplies. Still other sections, such as Scott's addition, have closely crowded houses, with dry closets and shallow wells, the latter sunk in soil of such a character that water stands in them at all times within a few feet of the surface and frequently practically at the ground level.

It is thus seen that there are many things demanding quite different handling, from a health standpoint, in the various sections of our recently annexed territory. In order to get the worst conditions corrected as speedily as possible, and also in order to get a general idea of the special things demanding our attention, the Board of Health employed four additional sanitary officers from a few days after annexation through the month of January. These men were assigned to routine work in the old city, thus releasing several of our trained men to go over the new territory.

It was found that the most serious condition was the existence of about 2,500 dry closets, most of which were in very bad condition. It will be recalled that the number of these abominations in the old city had been reduced from about 4,000 to less than 900. Every one of these in the new territory was carefully inspected and its condition entered in the special card index which we have for dry closets. The work of inspecting 2,500 of these, entering them on our index, serving the necessary notices for repairs or for the replacing with a new sanitary closet, and reinspecting (often more than once) to see that our orders have been complied with, is a job of no small proportions for our small force of sanitary officers. The work has, however, under the direction of our Chief Sanitary Officer, Mr. W. T. Tuck, progressed splendidly, and it is reasonably certain that the entire 2,500 dry closets will be in good shape before warm weather.

OUR INSUFFICIENT FORCE FOR THE ANNEXED TERRITORY.

In this connection I must go into 1915 happenings, although this report is for the year 1914. After the reports of the officers who were assigned to the annexed territory came in, it was evident to the Board of Health that at least six sanitary officers would be required to look after conditions therein. This number of new men was therefore asked for, as well as an additional clerk. Unfortunately the City Council could not see its way to granting this request, and only two more sanitary officers were given us. Our force of sanitary officers, as I have repeatedly directed attention to, has never been sufficient to do the work which should be done, and there is no question but that having only eight men to look out for twenty-four square miles of territory places us in a worse predicament than we were in with six men to look after eleven square miles.

Our worst predicament, however, will probably be in connection with extending over the larger area our direct supervision over contagious diseases and the many allied matters looked out for by our Medical Inspector. Up to the present time (February 22, 1915) no emergency in this connection has yet arisen. It has been three and one-half months since annexation, but the diseases which claim the attention of the Medical Inspector at this season of the year (scarlet fever, diphtheria and measles) have fortunately not been heavy. When typhoid time comes and when our inevitable cycle brings about large numbers of cases of measles, no one man—not even one of Dr. Summers' energy and ability—can possibly cover territory of this size. Urgent cases will be sure to arise in several places at once, to say nothing of the routine work, and, unless provided for, spread of disease and loss of life will inevitably result.

It was the wish of the Board of Health and myself not to recommend any final plan for dealing with this situation, but to try out several plans until the best one was hit on, using for this purpose money from our expense account. Owing, however, to the revenue of the city being less than was anticipated, even our expense account was cut. We are thus placed in a real predicament, and what the outcome will be cannot be foreseen.

SANITARY INSPECTIONS.

The importance of sanitary inspections for the correction of nuisances is coming to be more generally recognized. The most important things in this connection are work done for the improvement of stables, the handling of manure and other measures for limiting the breeding of flies. Most important of all is the work which has been done in connection with dry closets. All this work has been done with as great thoroughness as has been possible with so small a force of sanitary officers.

FLIES.

Our work for controlling the fly nuisance has progressed steadily, not only in connection with the improvement in stables, but also in other direct means for accomplishing this end. Education of the public has been an important part of this work. In my last annual report I referred to the maggot trap which had been worked out by Mr. Tuck and myself. The principle on which the maggot trap is based was much criticized by several persons, but it turned out that this criticism was based on insufficient observations. I am pleased to be able to state that the accuracy of our observations and the usefulness of the maggot trap have been confirmed not only by our own more recent work, but also by work undertaken by the United States Department of Agriculture, Entomological Division.

We have in mind certain experiments which, if successful, will furnish sanitarians with still another means of limiting the breeding of house flies. There is no question but that a great deal of disease is spread by this insect.

The report of the Chief Sanitary Officer shows the immense amount of work done by him and his force. I refer you to this report and the report of the officers under him for other details. When I state that Mr. Tuck's report shows that over 50,000 visits were paid by our force of six men (this number was increased to ten for the last month and a half of the year 1914) some idea is given of what has been accomplished.

CONCLUSION.

I cannot close this report without referring to the excellent work done by the other officers of the Richmond Health Department. It has so happened that the work of several of these officers has been referred to in what I have had to say on several special subjects, but the other men, whose work has been of the highest character, have not been specifically referred to. I wish, therefore, to state that every officer of this Department has contributed his part to the results which we have obtained. I am sure that there is not in the city government any department whose men are more devoted to their work or more capable in its execution.

I cannot speak too enthusiastically or gratefully of the co-operation of the members of the Board of Health. During the past year the thorough understanding between us has still further increased. This makes the eighth full year that all of us have worked together, and in this entire time there has never been the slightest friction, but on the contrary we have all worked together in perfect harmony for the good of the Department and the city.

Respectfully submitted,

E. C. LEVY, M. D.,
Chief Health Officer.

FINANCIAL STATEMENT—SUMMARY.

Account.	Appropriation.	Expended.	Balance.
Pay-roll	$28,553 73	28,553 73	
Expense	17,500 00	8,062 89	$ 386 83
Sanitary improvement of milk supply		4,654 17	
Tuberculosis campaign		4,023 47	
Educational campaign		372 64	
Special vaccination	4,000 00	3,497 46	502 54
New Smallpox Hospital Building	5,000 00	182 05	4,817 95
Total	$55,053 73	$49,346 41	$5,707 32

Total appropriations as above		$55,053 73
Reimbursements:		
Unexpended balance as above	$5,707 32	
Food permits	536 00	
Proceeds from sale of automobile	105 00	
Proceeds from sale of buggy	36 25	
For care of smallpox patients for county of Henrico	22 50	
Refunds account of duplicate vouchers	4 50	
Total reimbursements		$ 6,411 57
Net cost of maintenance of the Health Department for the year 1914		$48,642 16

Pay Roll.

*Chief Health Officer	$ 3,275 00	
Medical Inspector	2,000 00	
Registrar of Vital Statistics	1,350 00	
*Clerk	1,080 00	
*Bacteriologist	1,353 89	
*Fumigator	984 17	
*Stenographer	751 50	
Plumbing Inspector	1,600 00	
Assistant Plumbing Inspector	1,200 00	
Food Inspector	1,200 00	
*Assistant Food Inspector	984 17	
Chief Sanitary Officer	1,200 00	
Sanitary Officer, 1st District	1,000 00	
Sanitary Officer, 2nd District	1,000 00	
Sanitary Officer, 3rd District	1,000 00	
Sanitary Officer, 4th District	1,000 00	
Sanitary Officer, 5th District	1,000 00	
District Physician, 1st District	900 00	
District Physician, 2nd District	900 00	
District Physician, 3rd District	900 00	
District Physician, 4th District	900 00	
District Physician, 5th District	900 00	
District Physician, 6th District	900 00	
District Physician, 7th District	900 00	
†Assistant to District Physicians	275 00	
Total disbursements for pay roll		$28,553 73

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*Increase in salary from $3,000.00 to $3,300.00.
*Increase in salary from $900.00 to $1,080.00.
*Increase in salary from $900.00 to $2,000.00.
*Increase in salary from $900.00 to $1,000.00.
*Increase in salary from $600.00 to $780.00.
*Increase in salary from $900.00 to $1,000.00.
†Position created.

Expense.

Addressograph supplies	$ 2 00
Advertising	41 28
Automobile repairs, storage and supplies	535 46
Binding and ruling	55 73
City Directory	6 00
Diagram of contagious diseases	20 00
Disinfectants	345 25
Diphtheria antitoxin	1,182 00
Electric batteries and lamps	16 52

Electrotypes	9 17	
Extra help (stenographer, sanitary officers)	273 35	
Extra nurse, diphtheria	76 78	
Extra help, annexation	840 00	
Express, drayage, etc	50 41	
Hire of horse	5 00	
Insurance on automobile	49 95	
Services for intubation, diphtheria	231 00	
Laboratory fixtures	10 50	
Laboratory supplies	376 18	
Multigraph supplies	10 65	
Motorcycle supplies	8 40	
Officers' badges	12 88	
Oil of peppermint	6 00	
Postage	281 92	
Printing	299 16	
Stationery	169 98	
Telephones	136 64	
Towel and soap supplies	12 00	
Traveling expenses C. H. O	103 90	
Traveling expenses, Plumbing Inspector	125 00	
Typewriter—repairs and rent	8 50	
Infant Work:		
Nurses' handbags	21 00	
Instruments, scales and supplies	37 30	
Salary of nurses	2,543 00	
Salary of nurses, annexation	152 00	
Badges for nurses, annexation	8 00	
Total disbursement for expense		$ 8,062 89

Sanitary Improvement of Milk Supply.

Automobile repairs, storage and supplies	$ 308 75	
Board of horse	252 00	
Bacteriological examination of milk	352 42	
Help in laboratory	278 40	
Insurance on automobile	49 95	
Repairs and supplies, bicycle	10 75	
Repairs to buggy and shoeing horse	67 90	
Salary of Dairy Inspector	1,500 00	
Salary of Assistant Dairy Inspector	1,000 00	
Traveling expenses of Dairy Inspector	832 75	
Thermometers, etc.	1 25	
Total disbursement for sanitary improvement of milk supply		$ 4,654 17

Tuberculosis Campaign.

Disinfectants	$ 400 00	
Drugs for dispensaries	316 22	
Electric lights, dispensaries	12 30	
Fuel for dispensaries	18 00	
Janitor and help hired at dispensaries	126 00	
Milk	310 00	
Rent for Third Street Dispensary	240 00	
Repairs at dispensaries	41 00	
Salary of nurses	1,560 00	
Services of Chiefs of Clinics	720 00	
Sputum cups and holders	210 50	
Supplies for dispensaries	4 45	
Paper napkins	65 00	
Total disbursement for tuberculosis campaign..		$ 4,023 47

Educational Campaign.

Books	$ 55 75	
Chamber of Commerce Exhibit	127 47	
Exhibit at Fair	113 82	
Exhibit at Jacksonville, Florida	32 50	
Fly traps	7 94	
Photos of Dairy Barns, etc	13 66	
Picture frames, etc.	21 50	
Total disbursement for educational campaign..		$ 372 64

Special Vaccination.

Food at Smallpox Hospital	$ 793 65	
Guard and help at Smallpox Hospital	609 09	
Hire of horse	155 00	
Insurance on buildings	96 00	
Instruments, drugs, etc.	35 54	
Nurse hire	367 97	
Repairs to pump and well	74 25	
Repairs at Hospital	30 98	
Services of vaccinators	293 48	
Telehone	78 00	
Vaccine virus	763 75	
Household supplies at Hospital	73 55	
Wagon and harness repairs	30 20	
Diagnostician (Dr. W. J. West)	96 00	
Total disbursement for special vaccination....		$ 3,497 46

New Smallpox Hospital Building.

Drawing plans for new building	$ 182 05	

E. L. HASKER,
Registrar,

TABLES

AND

SUBSIDIARY REPORTS

TABLE

Showing Number of Marriage Licenses

MONTH	1905		1906		1907		1908	
	White	Colored	White	Colored	White	Colored	White	Colored
January	41	31	35	24	41	24	44	34
February	31	18	41	32	40	27	43	22
March	35	18	22	29	35	29	34	24
1st Quarter	107	67	98	85	116	80	121	80
April	56	41	73	46	71	56	78	57
May	32	27	20	26	41	32	35	28
June	69	38	62	45	76	47	80	50
2d Quarter	157	106	155	117	188	135	193	135
July	40	31	36	23	52	39	32	47
August	46	42	26	32	36	37	31	34
September	49	31	38	39	60	43	44	51
3d Quarter	135	104	100	94	148	119	107	132
October	64	30	56	35	78	53	63	35
November	75	39	67	36	91	41	59	49
December	69	53	98	65	70	67	71	77
4th Quarter	208	122	221	136	239	161	193	161
Total	607	399	574	432	691	495	614	508
Yearly totals	1,006		1,006		1,186		1,122	

No. 1.

Issued 1905 to 1914, Inclusive.

1909		1910		1911		1912		1913		1914	
White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored
37	28	42	30	52	42	58	36	48	51	24	30
45	51	42	36	53	45	55	32	53	48	48	47
37	72	50	54	37	35	36	59	61	61	39	48
119	151	134	120	142	122	149	127	162	160	111	125
79	71	68	62	84	59	82	85	66	71	102	60
36	27	54	41	35	47	56	50	49	65	55	49
54	57	80	82	72	49	98	79	99	71	95	105
169	155	202	185	191	155	236	214	214	207	252	214
49	45	55	54	51	53	60	65	65	54	53	54
40	40	48	49	58	44	65	59	54	52	60	52
45	54	58	64	60	46	70	84	74	75	79	85
134	139	161	167	169	143	195	208	193	181	192	191
64	41	84	57	90	58	90	50	91	60	105	66
68	60	88	78	87	53	91	84	107	64	103	95
91	73	81	69	101	90	102	125	95	89	106	82
223	174	253	204	278	211	283	259	303	213	314	243
645	619	750	676	780	631	863	808	872	761	869	773
1,264		1,426		1,411		1,671		1,633		1,642	

TABLE No. 2

*Births Reported During 1914, with Sex and Color **

MONTH	WHITE		COLORED		TOTAL		Grand Total
	Male	Female	Male	Female	Male	Female	
January	96	72	51	49	147	121	268
February	72	77	55	52	127	129	256
March	79	90	47	49	126	139	265
April	74	64	36	37	110	101	211
May	83	69	44	51	127	120	247
June	90	85	57	72	147	157	304
July	85	88	44	57	129	145	274
August	73	73	67	48	140	121	261
September	93	103	49	59	142	162	304
October	82	83	51	34	133	117	250
November	89	64	42	35	131	99	230
December	103	78	64	40	167	118	285
Total	1,019	946	607	583	1,626	1,529	3.155

*Stillbirths are not included in any of the tables of births or deaths.

TABLE No. 2A.

Giving Birth Rate During 1914—by Color.

COLOR	Population. (Official Estimate U. S. Bureau of the Census)	NUMBER OF BIRTHS			BIRTH RATE PER 1,000 INHABITANTS
		Male	Female	Total	
White	85,498	1,019	946	1,965	22.98
Colored	49,419	607	583	1,190	24.08
Total	134,917	1,626	1,529	3,155	23.38

TABLE No. 3.

Attendants at Birth.

BY WHOM REPORTED	WHITE		COLORED		TOTAL		GRAND TOTAL
	Male	Female	Male	Female	Male	Female	
Physician	841	803	196	179	1,037	982	2,019
Midwife	178	143	411	404	589	547	1,136
Total	1.019	946	607	583	1.626	1,529	3,155

TABLE No. 4

Stillbirths by Months

MONTH	White	Colored	Unknown Color	Total
January	11	18	0	29
February	7	15	0	22
March	6	19	1	26
April	7	11	0	18
May	15	15	2	32
June	11	11	0	22
July	11	19	2	32
August	7	13	0	20
September	12	15	0	27
October	7	15	0	22
November	5	16	0	21
December	7	14	0	21
Total	106	181	5	292

TABLE No. 9.

POPULATION OF RICHMOND, VIRGINIA, 1870–1914.

(Official Estimates of the U. S. Bureau of the Census.)

YEAR	White	Col'd	Total	YEAR	White	Col'd	Total
1870*	27,928	23,110	51,038	1890*	49,034	32,354	81.388
1871	28,712	23,582	52.294	1891	49.410	32,344	81.754
1872	29,496	24.054	53,550	1892	49,786	32,334	82 120
1873	30,280	24.526	54,806	1893	50,162	32.324	82 486
1874	31.064	24.998	56,062	1894	50,538	32,314	82,852
1875	31,846	25.470	57,313	1895	50,914	32,304	83.218
1876	32,632	25,942	58.574	1896	51,290	32 294	83,584
1877	33.416	26.414	59.830	1897	51,666	32,284	83,950
1878	34.200	26.886	61.086	1898	52,042	32.274	84 316
1879	34.984	27,358	62,342	1899	52,418	32,264	84 682
1880*	35,765	27.835	63.600	1900†	52 879	32 285	85,164
1881	37.092	28,287	65,379	1901	53,850	32,690	86,540
1882	38,419	28,739	67.158	1902	54,821	33,095	87,916
1883	39,746	29,191	68,937	1903	55,792	33,500	89,292
1884	41,073	29,643	70,716	1904	56,763	33,905	90,668
1885	42,400	30,095	72.495	1905	57,734	34.310	92.044
1886	43,727	30,547	74,274	1906	58.706	34,715	93 421
1887	45,054	30,999	76,053	1907†	70 429	42,984	113,413
1888	46,381	31,451	77,832	1908	71,401	43,389	114,790
1889	47,708	31.903	79,611	1909	72,373	43.794	116,167
				1910‡	81.108	46.881	127,989
				1911	82,205	47,516	129,721
				1912	83,303	48.150	131,453
				1913	84,401	48,784	133,185
				1914	85,498	49,419	134,917

*Census year.

†The population given for the Census years 1900 and 1910 are midyear (July 1st) estimates. The actual Census of 1900 gave a population of 85,050; that of 1910, a population of 127,628 as of June 1st and April 15th, respectively. The midyear estimates for these years will be used by the Census Bureau in calculating its official vital statistics rates for these two census years.

‡Annexation added a population of 18,615 on December 6, 1906, and a population of 10,370 on April 15, 1910.

The estimates of population for 1911, 1912 and 1913 differ from those published in previous reports. The figures in the above table are more recent estimates made by the U. S. Bureau of the Census.

TABLE No. 10

Civil Condition of Decedents

CIVIL CONDITION	WHITE		COLORED		Total
	Male	Female	Male	Female	
Single	307	204	400	310	1,221
Married	306	184	226	176	892
Widowed	110	171	62	174	517
Divorced	1	1	0	3	5
Unknown	10	2	8	8	23
Total	734	562	696	666	2 658

TABLE No. 11

Nativity of Decedents

NATIVITY	WHITE		COLORED		Total
	Male	Female	Male	Female	
Virginia	588	441	609	607	2,245
Other parts of United States	70	74	54	50	248
Austria	3	0	0	0	3
Australia	0	1	0	0	1
Bohemia	1	0	0	0	1
Canada	1	1	0	0	2
England	2	4	0	0	6
Europe	0	1	0	0	1
France	1	0	0	0	1
Greece	1	0	0	0	1
Germany	15	14	0	0	29
Holland	0	1	0	0	1
Ireland	17	9	0	0	26
Italy	2	2	0	0	4
Norway	0	1	0	0	1
Poland	0	1	0	0	1
Roumania	1	0	0	0	1
Russia	2	6	0	0	8
Syria	0	2	0	0	2
Scotland	5	0	0	0	5
Unknown	25	4	33	9	71
Total	734	562	696	666	2,658

TABLE No. 13

By Whom Certified

BY WHOM CERTIFIED	WHITE		COLORED	
	Male	Female	Male	Female
Physician	627	525	542	573
Coroner	107	37	154	93
Total	734	562	696	666

TABLE No. 14.

Giving Mortality for Each Month of the Year, and the Relative Mortality of Ea Month Reduced to a Standard of 100.

MONTH	WHITE		COLORED		TOTAL	Relat Morta
	Male	Female	Male	Female		
January	63	53	66	82	264	
February	67	42	44	66	219	
March	65	65	67	71	268	
April	77	50	55	65	247	
May	53	41	72	41	207	
June	72	51	66	58	247	
July	76	51	63	49	239	
August	52	37	52	45	186	
September	52	40	40	53	185	
October	50	37	57	47	191	
November	58	48	56	40	202	
December	49	47	58	49	203	
Total	734	562	696	666	2,658	....

*The relative mortality for each month as calculated in this table takes into accou the actual number of days in each month.

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TABLE No. 15.

Showing the Number of Deaths, Monthly, of the Two Races, from 1905 to 1914, Inclusive.

MONTH	1905		1906		1907		1908		1909		1910		1911		1912		1913		1914	
	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored
January	70	55	78	77	117	135	126	142	95	90	163	131	107	114	123	136	120	131	116	148
February	77	94	71	76	105	121	107	128	87	89	124	108	110	88	125	107	145	90	109	110
March	81	92	83	81	117	141	110	113	110	128	113	105	109	140	139	114	126	117	130	138
April	59	82	76	93	112	113	97	90	102	111	108	110	106	100	111	108	110	110	127	120
May	47	64	78	73	106	101	111	107	110	105	123	128	111	119	102	91	105	112	94	113
June	98	109	97	110	128	131	113	127	123	90	143	146	139	111	91	99	131	146	123	124
July	77	92	87	92	115	141	113	106	115	114	129	129	136	137	107	152	115	112	127	112
August	58	65	70	83	89	97	112	93	77	99	91	124	119	101	116	106	101	112	89	97
September	66	58	88	71	97	90	91	75	73	82	116	98	93	105	117	113	98	100	92	93
October	67	51	79	91	102	113	92	78	97	107	95	113	112	117	111	108	122	84	87	104
November	60	62	73	82	76	79	91	82	100	98	116	115	118	110	98	110	101	102	106	96
December	60	73	111	88	125	101	99	83	111	91	150	109	117	99	132	99	137	91	96	107
Total	820	897	991	1,017	1,289	1,363	1,262	1,224	1,200	1,204	1,471	1,416	1,377	1,341	1,372	1,343	1,411	1,307	1,296	1,362
Grand total	1,717*		2,008†		2,652†		2.486†		2,404†		2,887†		2,718†		2,715†		2,718†		2,658†	

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*Nonresidents not included.

†Nonresidents (178 in 1906; 155 in 1907; 167 in 1908; 219 in 1909; 331 in 1910; 267 in 1911; 290 in 1912; 297 in 1913, and 256 in 1914).

Eliminating these, as in previous years, the total deaths were 1,980 in 1906; 2,497 in 1907; 2,319 in 1908; 2,185 in 1909; 2,556 in 1[illegible],451 in 1911; 2,425 in 1912; 2,421 in 1913, and 2,402 in 1914.

TABLE No. 16.

Deaths for the Year Ending December 31, 1914—Classified by Causes, Months, Color and Sex.

CAUSES OF DEATH	MONTHS												WHITE			COLORED			Grand Total
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
I.—GENERAL DISEASES.																			
1. Typhoid fever	3		1		2	1	2	4	3		1	2	4	4	8	6	5	11	19
4. Malaria								1									1	1	1
6. Measles				1									1		1				1
7. Scarlet fever		1									1		2		2				2
8 Whooping cough	8	8	7	9	11	4	4	5	5				9	8	17	23	21	44	61
9. Diphtheria and croup								1	1	2			2	1	3		1	1	4
10. Influenza	4	5	6	4	1						1	4	8	8	16	3	6	9	25
14. Dysentery	2				1	2	3	1	1	1			3	3	6	2	3	5	11
18 Erysipelas					1								1		1				1
19. Other epidemic diseases (German measles)				1			1						2		2				2
20. Purulent infection and septicemia	3			1								2	3	2	5	1		1	6
24. Tetanus	2		3			1	1	2		1	1			1	1	7	3	10	11
26. Pellagra	1	2	3	3	1		2	2	2	4	2	1	10	7	17	2	4	6	23
28. Tuberculosis of the lungs	26	18	25	20	21	16	20	20	15	18	25	23	40	43	83	84	80	164	247
29. Acute miliary tuberculosis	2			1			2		1			2		3	3	3	2	5	8
30. Tuberculous meningitis		1	2	1	3	3			3		2	1	10	4	14	1	1	2	16
31. Abdominal tuberculosis		2	2	4	2	2	1	1	1	1		3	8	5	13	3	3	6	19
33. White swellings							1									1		1	1
34. Tuberculosis of other organs	1			1					1	1			1		1	3		3	4
35. Disseminated tuberculosis										1			1		1				1
36. Rickets	2				1		2		1	1			1		1	4	2	6	7
37. Syphilis	3	1	1	8	1	6		3	2	2	2	3	9	1	10	14	8	22	32
39. Cancer of the buccal cavity				2	1								1	2	3				3
40. Cancer of the stomach and liver	3	3	4	2	5	2	3	1	5	2	3		14	11	25	2	6	8	33
41. Cancer of the peritoneum, intestines, rectum	4	2		1	1	2	2			2			5	6	11	1	2	3	14
42. Cancer of the female genital organs	2	3	2	5	3	2	1		5	1	1	3		13	13		15	15	28
43. Cancer of the breast	2	1	3	2		2	1	1	1		1			12	12		2	2	14
44. Cancer of the skin		1					3	1					3		3	2		2	5
45. Cancer of other and unspecified organs	3	2	3	2	1	6	3		1	2	3	2	16	6	22	2	4	6	28
46. Other tumors (female genital excepted)				1													1	1	1
47. Acute articular rheumatism		1		2	1	1	2			1	1	1	3	3	6	2	2	4	10

48. Chronic rheumatism and gout	....	....	....	....	1	2	1	....	1	1	....	....	....	1	1	1	4	5	6
50. Diabetes	1	3	1	1	1	1	....	2	....	2	2	....	7	5	12	2	....	2	14
51. Exophthalmic goitre	....	1	....	....	....	....	1	....	2	....	1	....	....	4	4	....	1	1	5
52. Addison's disease	1	....	....	....	....	....	....	....	1	....	....	....	1	1	2	....	....	....	2
53. Leuchaemia	....	....	....	....	....	....	....	....	....	....	....	1	1	....	1	....	....	....	1
54. Anemia, chlorosis	....	....	1	....	3	2	....	1	....	....	1	1	4	4	8	1	....	1	9
55. Other general diseases	....	....	....	1	....	....	....	....	....	1	....	....	1	....	1	1	....	1	2
56. Alcoholism (acute or chronic)	....	....	....	1	....	2	1	1	1	1	....	....	6	1	7	....	....	....	7
57. Chronic lead poisoning	1	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	1
59. Other chronic poisonings	....	....	....	....	1	....	....	....	....	....	....	1	1	....	1	1	....	1	2
II.—DISEASES OF THE NERVOUS SYSTEM																			
60. Encephalitis	....	....	....	....	....	....	1	....	....	....	....	1	2	....	2	....	....	....	2
61. Simple meningitis	....	5	2	4	1	1	1	....	....	2	....	1	4	4	8	4	5	9	17
62. Locomotor ataxia	1	1	1	6	....	....	....	1	....	....	1	....	11	....	11	....	....	....	11
63. Other diseases of the spinal cord	....	1	....	2	1	1	2	1	1	2	....	....	2	2	4	4	3	7	11
64. Cerebral hemorrhage, apoplexy	17	14	9	16	13	9	14	11	18	11	24	15	55	42	97	35	39	74	171
65. Softening of the brain	....	....	1	2	....	....	1	....	....	....	....	1	2	2	4	....	1	1	5
66. Paralysis without specified cause	1	1	....	1	....	....	1	1	2	1	1	....	5	2	7	1	1	2	9
68. Other forms of mental alienation	....	....	1	....	....	1	....	....	....	....	....	....	1	1	2	....	....	....	2
69. Epilepsy	....	....	....	....	....	....	....	1	....	2	....	1	1	1	2	....	2	2	4
70. Convulsions (nonpuerperal)	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	1	1
71. Convulsions of infants	....	3	2	1	1	3	2	1	2	....	1	....	4	1	5	5	6	11	16
74. Other diseases of the nervous system	2	1	2	3	....	2	2	....	....	2	....	1	3	8	11	2	2	4	15
76. Diseases of the ears	....	1	1	....	....	....	....	....	....	....	....	....	1	1	2	....	....	....	2
III.—DISEASES OF THE CIRCULATORY SYSTEM																			
78. Acute endocarditis	....	1	....	1	2	....	2	1	....	3	1	....	4	2	6	2	3	5	11
79. Organic diseases of the heart	30	17	38	26	17	22	18	17	8	22	17	28	76	58	134	72	54	126	260
80. Angina pectoris	1	3	2	....	1	....	1	....	1	....	....	....	3	2	5	1	3	4	9
81. Diseases of the arteries, atheroma, aneurysm, etc.	1	....	2	3	2	4	3	....	2	6	1	....	7	1	8	7	9	16	24
82. Embolism and thrombosis	....	....	....	....	1	....	....	1	....	....	1	....	1	1	2	1	....	1	3
85. Hemorrhage; other diseases of the circulatory system	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	1	1
IV.—DISEASES OF THE RESPIRATORY SYSTEM																			
86. Diseases of the nasal fossae	....	....	2	....	....	....	....	....	....	....	....	....	....	2	2	....	....	....	2
87. Diseases of the larynx	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....	1	1
88. Diseases of the thyreoid body	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	1
89. Acute bronchitis	1	2	5	....	4	1	....	....	1	1	....	4	2	2	4	10	5	15	19
90. Chronic bronchitis	2	1	....	....	1	....	....	1	....	1	3	....	1	2	3	4	2	6	9
91. Bronchopneumonia	23	15	22	15	10	6	3	5	1	5	3	14	14	19	33	42	47	89	122
92. Pneumonia	21	12	24	11	6	4	2	6	9	7	8	12	18	18	36	41	45	86	122
93. Pleurisy	....	2	....	1	1	....	....	....	....	1	1	....	3	1	4	1	1	2	6

TABLE No. 16.

*Deaths for the Year Ending December 31, 1914—Classified by Causes, **Months**, Color and Sex.*

CAUSES OF DEATH	MONTHS												WHITE			COLORED			Grand Total
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
I.—GENERAL DISEASES.																			
1. Typhoid fever	3	.....	1	.....	2	1	2	4	3	.....	1	2	4	4	8	6	5	11	19
4. Malaria	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1
6. Measles	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	1
7. Scarlet fever	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2	.....	2	.....	.....	.....	2
8 Whooping cough	8	8	7	9	11	4	4	5	5	.....	.....	.....	9	8	17	23	21	44	61
9. Diphtheria and croup	.....	.....	.....	.....	.....	.....	.....	1	1	2	.....	.....	2	1	3	.....	1	1	4
10. Influenza	4	5	6	4	1	.....	.....	.....	.....	.....	1	4	8	8	16	3	6	9	25
14. Dysentery	2	.....	.....	.....	1	2	3	1	1	1	.....	.....	3	3	6	2	3	5	11
18 Erysipelas	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	1
19. Other epidemic diseases (German measles)	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	2	.....	2	.....	.....	.....	2
20. Purulent infection and septicemia	3	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	3	2	5	1	.....	1	6
24. Tetanus	2	.....	3	.....	.....	1	1	2	.....	1	1	.....	.....	1	1	7	3	10	11
26. Pellagra	1	2	3	3	1	.....	2	2	2	4	2	1	10	7	17	2	4	6	23
28. Tuberculosis of the lungs	26	18	25	20	21	16	20	20	15	18	25	23	40	43	83	84	80	164	247
29. Acute miliary tuberculosis	2	.....	.....	1	.....	.....	2	.....	1	.....	.....	2	.....	3	3	3	2	5	8
30. Tuberculous meningitis	.....	1	2	1	3	3	.....	.....	3	.....	2	1	10	4	14	1	1	2	16
31. Abdominal tuberculosis	.....	2	2	4	2	2	1	1	1	1	.....	3	8	5	13	3	3	6	19
33. White swellings	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	1
34. Tuberculosis of other organs	1	.....	.....	1	.....	.....	.....	.....	1	1	.....	.....	1	.....	1	3	.....	3	4
35. Disseminated tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	1	.....	.....	.....	1
36. Rickets	2	.....	.....	.....	1	.....	2	.....	1	1	.....	.....	1	.....	1	4	2	6	7
37. Syphilis	3	1	1	8	1	6	.....	3	2	2	2	3	9	1	10	14	8	22	32
39. Cancer of the buccal cavity	.....	.....	.....	2	1	.....	.....	.....	.....	.....	.....	.....	1	2	3	.....	.....	.....	3
40. Cancer of the stomach and liver	3	3	4	2	5	2	3	1	5	2	3	.....	14	11	25	2	6	8	33
41. Cancer of the peritoneum, intestines, rectum	4	2	.....	1	1	2	2	.....	.....	2	.....	.....	5	6	11	1	2	3	14
42. Cancer of the female genital organs	2	3	2	5	3	2	1	.....	5	1	1	3	.....	13	13	.....	15	15	28
43. Cancer of the breast	2	1	3	2	.....	2	1	1	1	.....	1	.....	.....	12	12	.....	2	2	14
44. Cancer of the skin	.....	1	.....	.....	.....	.....	3	1	.....	.....	.....	.....	3	.....	3	2	.....	2	5
45. Cancer of other and unspecified organs	3	2	3	2	1	6	3	.....	1	2	3	2	16	6	22	2	4	6	28
46. Other tumors (female genital excepted)	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1
47. Acute articular rheumatism	.....	1	.....	2	1	1	2	.....	.....	1	1	1	3	3	6	2	2	4	10

48. Chronic rheumatism and gout	....	....	....	....	1	2	1	....	1	1	....	....	....	1	1	1	4	5	6
50. Diabetes	1	3	1	1	1	1	....	2	....	2	2	....	7	5	12	2	....	2	14
51. Exophthalmic goitre	....	1	....	....	....	....	1	....	2	....	1	....	....	4	4	....	1	1	5
52. Addison's disease	1	....	....	....	....	....	....	....	1	....	....	....	1	1	2	....	....	....	2
53. Leuchaemia	....	....	....	....	....	....	....	....	....	....	....	1	1	....	1	....	....	....	1
54. Anemia, chlorosis	....	....	1	....	3	2	....	1	....	....	1	1	4	4	8	1	....	1	9
55. Other general diseases	....	....	....	1	....	....	....	....	....	1	....	....	1	....	1	1	....	1	2
56. Alcoholism (acute or chronic)	....	....	....	1	....	2	1	1	1	1	....	....	6	1	7	....	....	....	7
57. Chronic lead poisoning	1	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	1
59. Other chronic poisonings	....	....	....	....	1	....	....	....	....	....	....	1	1	....	1	1	....	1	2
II.—DISEASES OF THE NERVOUS SYSTEM																			
60. Encephalitis	....	....	....	....	....	....	1	....	....	....	....	1	2	....	2	....	....	....	2
61. Simple meningitis	....	5	2	4	1	1	1	....	....	2	....	1	4	4	8	4	5	9	17
62. Locomotor ataxia	1	1	1	6	....	....	....	1	....	....	1	....	11	....	11	....	....	....	11
63. Other diseases of the spinal cord	....	1	....	2	1	1	2	1	1	2	....	....	2	2	4	4	3	7	11
64. Cerebral hemorrhage, apoplexy	17	14	9	16	13	9	14	11	18	11	24	15	55	42	97	35	39	74	171
65. Softening of the brain	....	....	1	2	....	....	1	....	....	....	....	1	2	2	4	....	1	1	5
66. Paralysis without specified cause	1	1	....	1	....	....	1	1	2	1	1	....	5	2	7	1	1	2	9
68. Other forms of mental alienation	....	....	1	....	....	1	....	....	....	....	....	....	1	1	2	....	....	....	2
69. Epilepsy	....	....	....	....	....	....	....	1	....	2	....	1	1	1	2	....	2	2	4
70. Convulsions (nonpuerperal)	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	1	1
71. Convulsions of infants	....	3	2	1	1	3	2	1	2	....	1	....	4	1	5	5	6	11	16
74. Other diseases of the nervous system	2	1	2	3	....	2	2	....	....	2	....	1	3	8	11	2	2	4	15
76. Diseases of the ears	....	1	1	....	....	....	....	....	....	....	....	....	1	1	2	....	....	....	2
III.—DISEASES OF THE CIRCULATORY SYSTEM																			
78. Acute endocarditis	....	1	....	1	2	....	2	1	....	3	1	....	4	2	6	2	3	5	11
79. Organic diseases of the heart	30	17	38	26	17	22	18	17	8	22	17	28	76	58	134	72	54	126	260
80. Angina pectoris	1	3	2	....	1	....	1	....	1	....	....	....	3	2	5	1	3	4	9
81. Diseases of the arteries, atheroma, aneurysm, etc.	1	....	2	3	2	4	3	....	2	6	1	....	7	1	8	7	9	16	24
82. Embolism and thrombosis	....	....	....	....	1	....	....	1	....	....	1	....	1	1	2	1	....	1	3
85. Hemorrhage; other diseases of the circulatory system	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	1	1
IV.—DISEASES OF THE RESPIRATORY SYSTEM																			
86. Diseases of the nasal fossae	....	....	2	....	....	....	....	....	....	....	....	....	....	2	2	....	....	....	2
87. Diseases of the larynx	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....	1	1
88. Diseases of the thyreoid body	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	1
89. Acute bronchitis	1	2	5	....	4	1	....	....	1	1	....	4	2	2	4	10	5	15	19
90. Chronic bronchitis	2	1	....	....	1	....	....	1	....	1	3	....	1	2	3	4	2	6	9
91. Bronchopneumonia	23	15	22	15	10	6	3	5	1	5	3	14	14	19	33	42	47	89	122
92. Pneumonia	21	12	24	11	6	4	2	6	9	7	8	12	18	18	36	41	45	86	122
93. Pleurisy	....	2	....	1	1	....	....	....	....	1	1	....	3	1	4	1	1	2	6

TABLE No. 16—Continued.

Deaths for the Year Ending December 31, 1914—Classified by Causes, Months, Color and Sex.

CAUSE OF DEATH	MONTHS												WHITE			COLORED			Grand Total
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
IV.—DISEASES OF THE RESPIRATORY SYSTEM—Continued.																			
94. Pulmonary congestion, pulmonary apoplexy	2	4	3	2	......	5	1	......	4	2	4	2	1	4	5	14	10	24	29
96. Asthma	......	......	1	1	......	......	1	......	1	1	1	......	......	2	2	......	4	4	6
97. Pulmonary emphysema	1	......	1	......	......	......	......	......	1	......	......	1	2	......	2	1	1	2	4
98. Other respiratory diseases (tuberculosis excepted)	......	......	......	1	2	1	1	1	......	......	......	3	1	1	2	4	3	7	9
V.—DISEASES OF THE DIGESTIVE SYSTEM.																			
99. Diseases of the mouth and adnexa	......	1	......	......	1	......	1	......	......	......	......	......	2	......	2	1	......	1	3
100. Diseases of the pharynx	......	1	......	......	1	......	1	......	......	......	......	......	1	2	3	......	......	......	3
101. Diseases of the oesophagus	......	......	......	......	......	......	1	......	......	......	......	......	......	......	......	1	......	1	1
102. Ulcer of the stomach	1	1	......	1	1	2	......	......	......	......	......	......	2	......	2	1	3	4	6
103. Other diseases of the stomach (cancer excepted)	2	1	1	5	1	1	3	......	2	......	1	2	3	6	9	7	3	10	19
104. Diarrhea and enteritis (under 2 years)	1	1	......	1	2	31	25	13	11	8	4	......	33	18	51	21	25	46	97
105. Diarrhea and enteritis (2 years and over)	2	2	2	......	1	6	5	1	4	2	1	1	10	4	14	6	7	13	27
108. Appendicitis and typhlitis	2	1	2	1	4	2	6	1	1	......	2	3	4	8	12	8	5	13	25
109. Hernias, intestinal obstructions	6	......	1	1	1	3	2	......	4	4	3	3	5	9	14	7	7	14	28
110. Other diseases of the intestines	......	......	1	......	2	......	......	1	......	1	1	......	......	2	2	2	2	4	6
113. Cirrhosis of the liver	3	3	1	4	7	2	4	4	3	......	3	......	17	3	20	9	5	14	34
114. Biliary calculi	......	......	1	......	1	......	1	......	......	......	......	......	......	3	3	......	......	......	3
115. Other diseases of the liver	1	1	1	1	2	3	2	1	1	1	......	1	5	6	11	2	2	4	15
116. Diseases of the spleen	......	......	......	......	......	......	......	......	1	......	......	......	......	1	1	......	......	......	1
117. Simple peritonitis (nonpuerperal)	......	......	......	......	1	......	......	......	1	1	......	......	1	1	2	......	1	1	3
VI.—DISEASES OF THE GENITO-URINARY SYSTEM.																			
119. Acute nephritis	1	3	2	3	8	3	1	4	1	1	......	2	4	5	9	10	10	20	29
120. Bright's disease	15	18	17	16	17	20	15	16	17	20	17	10	69	45	114	39	45	84	198

122. Other diseases of the kidneys and adnexa	1	......	......	1	1	......	2	......	......	1	1	......	3	3	6	1	......	1	7
124. Diseases of the bladder	1	......	......	......	......	......	1	......	1	......	......	......	3	......	3	......	......	....	3
125. Other diseases of the urethra, urinary abscess, etc.	......	......	1	......	......	1	1	......	......	1	......	......	4	.....	4	......	......	......	4
126. Diseases of the prostate	......	......	2	2	......	......	......	1	2	......	3	2	9	......	9	3	......	3	12
129. Uterine tumor (noncancerous)	......	......	......	......	......	......	......	1	......	1	......	......	......	1	1	......	1	1	2
130. Diseases of the uterus	1	......	......	......	......	1	1	......	......	......	1	1	......	3	3	......	2	2	5
131. Cysts and other tumors of the ovary	1	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	1	1
132. Other (nonvenereal) diseases of female genital organs	......	1	......	......	......	......	......	......	......	......	3	1	......	1	1	......	4	4	5
VII.—THE PUERPERAL STATE.																			
134. Accidents of pregnancy	1	1	......	......	......	......	1	1	1	......	......	......	......	2	2	......	3	3	5
135. Puerperal hemorrhage	1	......	......	......	......	......	......	......	1	......	......	......	......	1	1	......	1	1	2
136. Other accidents of labor	......	2	......	......	1	......	1	......	......	1	......	1	......	2	2	......	4	4	6
137. Puerperal septicemia	2	......	3	2	......	2	2		2	1	1	3	......	8	8	......	13	13	21
138. Puerperal albuminuria and convulsions	2	......	2	2	2	1	......	2	1	......	......	......	......	8	8	......	4	4	12
VIII.—DISEASES OF THE SKIN.																			
142. Gangrene	......	......	3	.....	1	1	1	1	......	1	1	.....	5	1	6	1	2	3	9
143. Furuncle	......	......	......	......	......	1	......	......	......	......	......	......	1	......	1	......	......	......	1
145. Other diseases of the skin and adnexa	......	......	......	1	1	......	......	......	......	......	......	......	......	1	1	......	1	1	2
IX.—DISEASES OF THE ORGANS OF LOCOMOTION.																			
146. Diseases of the bones (tuberculosis excepted)	......	......	1	......	......	......	......	......	......	......	......	......	1	......	1	......	......	......	1
X.—MALFORMATIONS.																			
150. Congenital malformations (stillbirths not included)	1	2	......	......	.....	5	1	3	1	3	2	2	5	10	15	3	2	5	20
XI.—DISEASES OF EARLY INFANCY.																			
151. Congenital debility, icterus and sclerema	12	10	14	6	6	20	26	12	14	6	17	11	45	30	75	41	38	79	154
152. Other diseases peculiar to early infancy	4	1	......	2	2	1	1	3	2	3	2	2	5	4	9	10	4	14	23
XII.—OLD AGE.																			
154. Senility	4	4	2	......	1	1	1	......	1	1	1	3	3	8	11	3	5	8	19

TABLE No. 16—CONTINUED.

Deaths for the Year Ending December 31, 1914—Classified by Causes, Months, Color and Sex.

CAUSE OF DEATH	MONTHS												WHITE			COLORED			Grand Total
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
XIII.—EXTERNAL CAUSES.																			
155. Suicide by poison	1	1										1	3		3				3
156. Suicide by asphyxia			1										1		1				1
157. Suicide by hanging or strangulation								1					1		1				1
159. Suicide by firearms		1		2		1		1	1		1		6	1	7				7
160. Suicide by cutting or piercing instruments						1							1		1				1
161. Suicide by jumping from a high place												1		1	1				1
165. Other acute poisonings	1					1		2		1			1	1	2	2	1	3	5
166. Conflagration		1										1	1		1	1		1	2
167. Burns	1	5	4	3	3	1				2	1	3	6	7	13	7	3	10	23
168. Absorption of deleterious gases	1	1	4	2			1				1	2	7	1	8	1	3	4	12
169. Accidental drowning		1	1	6	2	4	2	2			1	1	11	1	12	8		8	20
170. Traumatism by firearms	1		2			1	1		1	1	2		5		5	4		4	9
172. Traumatism by fall	2	2	2	1	2	1	5	1	2		1		9	7	16	2	1	3	19
173. Traumatism in mines and quarries						1										1		1	1
174. Traumatism by machines		3		1	1					1			4		4	2		2	6
175. Traumatism by other crushing	2	2	2	4	1	3	3	4	1	3	4	4	19	3	22	11		11	33
177. Starvation											1					1		1	1
178. Excessive cold					1												1	1	1
179. Effects of heat						5	1							2	2	3	1	4	6
182. Homicide by firearms	4	1	1	1	1					4	1	2	1	1	2	11	3	14	16
183. Homicide by cutting or piercing instruments								0	1		3		1		1	2	1	3	4
184. Homicide by other means	4	2	2	1	1	1	1		1	1	3	1	2		2	8	8	16	18
186. Other external violence	1	2	1		1	1	2		1	1	1		3	1	4	7		7	11
186-A. Legal electrocution	2		2		1		1	2				1				9		9	9
XIV.—ILL-DEFINED DISEASES																			
187. Ill-defined organic diseases				1			1	1								2	1	3	3
189. Cause of death not specified or ill-defined	2	4	5	6	1	2	2	8	1	5	3	3	9	2	11	14	17	31	42
Total Deaths from All Causes	264	219	268	247	207	247	239	186	185	191	202	203	734	562	1,296	696	666	1,362	2,658

TABLE No. 17.

Deaths for the Year Ending December 31, 1914, Among Non-residents.

CAUSES OF DEATH	MONTHS												WHITE			COLORED			GRAND TOTAL
	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
I. GENERAL DISEASES.																			
1. Typhoid fever	1						1		2				1		1	2	1	3	4
8. Whooping cough									1							1		1	1
10. Influenza	2												2		2				2
20. Purulent infection and septicemia	1												1		1				1
24. Tetanus			1			1										2		2	2
26. Pellagra	1		1				2						3	1	4				4
28. Tuberculosis of the lungs	1	1	1		1	1	2		1				2		2	5	1	6	8
29. Acute miliary tuberculosis							2							1	1	1		1	2
30. Tuberculous meningitis					1								1		1				1
31. Abdominal tuberculosis		1		1						1		1	1	1	2		2	2	4
34. Tuberculosis of other organs				1						1			1		1	1		1	2
39. Cancer of the buccal cavity					1								1		1				1
40. Cancer of the stomach and liver	1	1		1	1		2		1		1		6	2	8				8
41. Cancer of the peritoneum, intestines, rectum	1									1				1	1	1		1	2
42. Cancer of the female genital organs			1	2	1	2						1		3	3		4	4	7
43. Cancer of the breast	1			1										2	2				2
45. Cancer of other or unspecified organs	1					2			1		2		2	2	4	1	1	2	6
47. Acute articular rheumatism						1							1		1				1
50. Diabetes		1						1			1		2	1	3				3
51. Exophthalmic goitre							1							1	1				1
52. Addison's disease	1												1		1				1
53. Leuchaemia												1	1		1				1
54. Anaemia. chlorosis			1										1		1				1
55. Other general diseases				1									1		1				1
56. Alcoholism, (acute or chronic)								1					1		1				1
II. DISEASES OF THE NERVOUS SYSTEM.																			
61. Simple meningitis		1											1		1				1
62. Locomotor ataxia								1					1		1				1
63. Other diseases of the spinal cord							1									1		1	1

TABLE 17—CONTINUED.

CAUSES OF DEATH	MONTHS												WHITE			COLORED			GRAND TOTAL
	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
DISEASES OF THE NERVOUS SYSTEM—CONTINUED.																			
64. Cerebral hemorrhage, appolexy	.....	1	1	2	1	1	2	2	.....	.....	2	1	5	4	9	1	3	4	13
66. Paralysis without specified cause	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	1	.....	.....	.....	1
74. Other diseases of the nervous system	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	1	1	2	.....	.....	.....	2
III. DISEASES OF THE CIRCULATORY SYSTEM.																			
78. Acute endocarditis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	1	.....	.....	.....	1
79. Organic diseases of the heart	2	2	2	2	.....	3	.....	1	.....	2	3	1	9	3	12	3	3	6	18
81. Diseases of the arteries, atheroma, aneurysm, etc	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	1
IV. DISEASES OF THE RESPIRATORY SYSTEM.																			
88. Diseases of the thyreoid body	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1
91. Bronchopneumonia	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	1
92. Pneumonia	1	1	.....	.....	.....	.....	.....	1	1	.....	.....	.....	3	1	4	.....	.....	.....	4
93. Pleurisy	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	1
94. Pulmonary congestion, pulmonary apoplexy	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	1	2	2
98. Other respiratory diseases (tuberculosis excepted)	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1
V. DISEASES OF THE DIGESTIVE SYSTEM.																			
103. Other diseases of the stomach (cancer excepted)	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	1	.....	.....	.....	1
104. Diarrhea and enteritis (under 2 years)	.....	.....	.....	.....	.....	2	2	.....	1	.....	.....	.....	3	1	4	1	.....	1	5
105. Diarrhea and enteritis (2 years and over)	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	1
108. Appendicitis and typhlitis	1	.....	.....	1	3	1	4	1	.....	.....	.....	2	4	5	9	4	.....	4	13
109. Hernias, intestinal obstructions	3	.....	1	.....	.....	1	.....	.....	.....	1	2	1	2	5	7	2	.....	2	9

110. Other diseases of the intestines										1				1	1				1
113. Cirrhosis of the liver	1												1		1				1
114. Biliary calculi			1											1	1				1
115. Other diseases of the liver							1		1	1		1	1	3	4				4
116. Diseases of the spleen									1					1	1				1
VI.—DISEASES OF THE GENITO-URINARY SYSTEM.																			
119. Acute nephritis			1											1	1				1
120. Bright's disease	1	3	3	1	3	2		2	2	1		2	13	5	18		2	2	20
122. Other diseases of the kidneys and adnexa	1													1	1				1
124. Diseases of the bladder									1				1		1				1
125. Other diseases of the urethra, urinary abscess, etc			1										1		1				1
126. Diseases of the prostate			1	2				1	2			1	4		4	3		3	7
129. Uterine tumor (noncancerous)								1						1	1				1
130. Diseases of the uterus						1	1				1	1		3	3		1	1	4
132. Other (nonvenereal) diseases of female genital organs											1						1	1	1
VII.—THE PUERPERAL STATE.																			
134. Accidents of pregnancy		1															1	1	1
135. Puerperal hemorrhage									1					1	1				1
136. Other accidents of labor		2										1		1	1		2	2	3
137. Puerperal septicemia				1		1						1		3	3				3
138. Puerperal albuminuria and convulsions	1			1	1	1		1						2	2		3	3	5
VIII.—DISEASES OF THE SKIN.																			
142. Gangrene			1				1						2		2				2
X.—MALFORMATIONS.																			
150, Congenital malformations (stillbirths not included)						3								3	3				3
XI.—DISEASES OF EARLY INFANCY.																			
151. Congenital debility, icterus and sclerema							1				1			2	2				2
XIII.—EXTERNAL CAUSES.																			
155. Suicide by poison												1	1		1				1
159. Suicide by firearms		1		1									2		2				2
160. Suicide by cutting or piercing instruments						1							1		1				1

TABLE No. 17—CONTINUED.

CAUSES OF DEATH.	MONTHS												WHITE			COLORED			GRAND TOTAL
	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
EXTERNAL CAUSES—CONTINUED.																			
167. Burns	.....	2	1	1	.....	.....	.....	.....	.....	.....	.....		3	.....	3	1	.....	1	4
168. Absorption of deleterious gases	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	1
169 Accidental drowning	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	.....	3	.....	3	.....	.....	.....	3
170. Traumatism by firearms	1	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	2	.....	2	1	.....	1	3
172 Traumatism by fall	.....	1	.....	.....	1	.....	1	.....	.....	.....	.....	.....	2	1	3	.....	.....	.....	3
173. Traumatism in mines and quarries	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	1
174 Traumatism by machines	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	1	.....	1	1	.....	1	2
175. Traumatism by other crushing	1	1	.....	1	.....	1	1	.....	.....	1	.....	2	4	2	6	2	.....	2	8
182. Homicide by firearms	1	1	.....	.....	1	.....	.....	.....	.....	1	.....	.....	1	.....	1	3	.....	3	4
186 Other external violence	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....	1	1	.....	1	2
186 A—Legal electrocution	2	.....	1	.....	1	.....	1	2	.....	.....	.....	1	.....	.....	.....	8	.....	8	8
XIV.—ILL-DEFINED DISEASES.																			
187. Ill-defined organic diseases	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	1
189. Cause of death not specified or ill-defined	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	1	2	.....	.....	.....	2
Total deaths from all causes among non residents	28	23	21	24	18	27	31	17	20	12	16	19	109	70	179	49	28	77	256

TABLE No. 18

Deaths Occurring in the Annexed Territory from the Date of Annexation, November 5, 1914 to the End of the Year 1914. These Deaths are not Included in Tables (16) or (17).

CAUSE OF DEATH	MONTH		WHITE			COLORED			Grand Total
	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
I.—GENERAL DISEASES.									
8. Whooping cough	......	1	......	......	0	1	....	1	1
18. Erysipelas	......	1	1	......	1	......	......	......	1
28. Tuberculosis of the lungs	6	4	4	4	8	......	2	2	10
31. Abdominal tuberculosis	......	1	......	1	1	......	......	0	1
40. Cancer and other malignant tumors of the stomach and liver	1	......	......	1	1	......	......	0	1
42. Cancer and other malignant tumors of the female genital organs	1	......	......	1	1	......	......	......	1
45. Cancer and other malignant tumors of other organs or organs not specified	1	......	......	1	1	......	......	0	1
53. Leuchaemia	1	......	......	1	1	......	......	0	1
54. Anaemia Chlorosis	1	......	1	......	1	......	......	0	1
II.—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.									
64. Cerebral hemorrhage, apoplexy	1	3	1	2	3	......	1	1	4
76. Diseases of the ears	1	......	......	1	1	......	......	0	1
III.—DISEASES OF THE CIRCULATORY SYSTEM.									
79. Organic diseases of the heart	2	7	4	3	7	......	2	2	9
IV.—DISEASES OF THE RESPIRATORY SYSTEM.									
89. Acute bronchitis	......	1	......	......	0	1	....	1	1
91. Bronchopneumonia	......	1	......	1	1	......	......	0	1
92. Pneumonia	1	2	......	1	1	......	2	2	3
97. Pulmonary Emphysema	1	......	......	......	0	......	1	1	1
V.—DISEASES OF THE DIGESTIVE SYSTEM.									
103. Other diseases of the stomach (cancer excepted)	......	1	......	......	0	1	....	1	1
113. Cirrhosis of the liver	1	......	......	1	1	......	......	0	1
117. Simple peritonitis (non-puerperal)	......	1	1	......	1	......	......	0	1
VI.—NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA.									
120. Bright's disease	1	2	2	1	3	......	......	0	3
X.—MALFORMATIONS.									
150 Congenital malformations	......	1	......	1	1	......	......	0	1
XI—DISEASES OF EARLY INFANCY.									
152. Other causes peculiar to early infancy	1	.....	1	......	1	......	....	....	1
XIII.—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.									
159. Suicide by firearms	1	......	1	......	1	......	....	....	1
Total	21	26	16	20	36	3	8	11	47

TABLE No. 19.

Deaths of Infants Under 1 Year Occurring in Richmond, Virginia, During the Year 1914, Classified by Age at Death, Month, Color, Sex, and Cause of Death.

1914	Under 1 day	2nd day	3rd day	4th day	5th day	6th day	7th day	8th day	9th day	10th day	11th day	12th day	13th day	14th day	3-4 wks	1-3 mos	3-6 mos	6-12 mos	Total
January	6	2		3			1		2			1	1	1	2	6	7	5	37
February	6	1	1	1		1	1								3	8	9	11	42
March	4	1		3		1							1	1	2	8	11	8	40
April	6	1	1		1				1			1			4	5	8	6	34
May	4				1	1		2					1		2	2	12	11	36
June	7	1	1	2	1		1				1			1	4	13	21	20	73
July	13			1	1	2								1	6	11	13	17	65
August	7		2				1		2		2		1		6	4	8	10	43
September	7		2	1				1		2					2	9	6	7	37
October	2	2					1	2		2						9	9	5	32
November	9					2	1	1								11	6	6	36
December	7		2	1							1		1		3	9	2	8	34
White	40	5	4	4	2	1	3	4	1	2	1		2	1	11	47	50	45	223
Colored	38	3	5	8	2	6	3	2	4	2	3	2	3	3	23	48	62	69	286
Male	49	4	7	5	2	2	4	4	2	2	3		2	3	25	54	54	71	293
Female	29	4	2	7	2	5	2	2	3	2	1	2	8	1	9	41	58	43	216
8. Whooping cough																6	11	14	31
10. Influenza																		1	1
14. Dysentery															1				1
18 Erysipelas																	1		1
24 Tetanus						1			1		2			1					5
28. Tuberculosis of the lungs																		2	2
29 Acute miliary tuberculosis																	1		1
30. Tuberculous meningitis																	1	3	4
31. Abdominal tuberculosis																1	1	2	4
35. Disseminated tuberculosis																1			1
36. Rickets															1	1	1	2	5
37. Syphilis	1														3	3	4	3	14
61. Meningitis													1				2	3	6
64. Cerebral hemorrhage apoplexy																	1	1	2
71. Convulsions of infants		1	1	1		2									1	4	2	2	14
74. Other diseases of the nervous system																		1	
76. Diseases of the ears																		2	
79. Organic diseases of the heart										1						1	2		

85. Hemorrhage: other diseases of the circulatory system	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	......	1
86. Diseases of the nasal fossae	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	1
89. Acute bronchitis	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	2	5	8
90. Chronic bronchitis	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	1	2
91. Bronchopneumonia	......	......	1	......	1	......	1	......	......	......	......	......	1	1	4	10	16	17	52
92. Lobar pneumonia	......	......	......	1	......	......	......	......	......	......	......	......	......	......	1	2	1	1	6
94. Pulmonary congestion, pulponary apoplexy	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	2	3
99. Diseases of the mouth and adnexa	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	1	......	2
100. Diseases of the pharynx	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	1
103. Other diseases of the stomach	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	3	4
104. Diarrhea and enteritis	......	......	......	......	......	......	......	......	......	......	......	......	......	......	5	17	29	33	84
109. Hernia intestinal obstruction	......	......	......	......	......	......	......	1	......	......	......	......	......	......	......	4	......	......	5
110. Other diseases of the intestines	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	......	2	3
117. Simple peritonitis	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	1
119. Acute nephritis	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	1
122. Other diseases of the kidneys and adnexa	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	1	2
150. Congenital malformations	8	......	......	1	......	......	1	......	......	......	......	......	......	......	1	3	5	1	20
151. Congenital debility	44	4	5	8	3	4	4	2	2	3	2	1	2	2	11	29	21	7	154
152. Other diseases peculiar to early infancy	12	2	1	1	......	......	......	3	2	......	......	......	......	......	2	......	......	......	23
167. Burns	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	3	3
168. Absorption of deleterious gases	......	......	......	......	......	......	......	......	......	......	......	......	1	......	1	4	1	......	7
177. Starvation	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	1
179. Excessive heat	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	1
184. Homicide by other means	11	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	11
186. Other external causes	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	......	1
187. Ill-defined organic diseases	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	1
189. Cause of death not specified or ill-defined	2	1	1	......	......	......	......	......	......	......	......	1	......	......	1	4	2	......	12
Total	78	8	9	12	4	7	6	6	5	4	4	2	5	4	34	95	112	114	509

TABLE No. 20

Giving Death Rate and Per Cent. of Deaths from Different Causes.

CAUSE OF DEATH	ACTUAL NUMBER OF DEATHS			DEATH RATE PER 1,000 LIVING			PERCENT. OF TOTAL MORTALITY		
	White	Colored	Total	White	Colored	Total	White	Colored	Total
I. General Diseases........	338	349	687	3.95	7.03	5.10	26.07	25.62	25.85
II. Diseases of the nervous system and organs of special sense...........	155	111	266	1.81	2.25	1.97	11.96	8.15	10.01
III. Diseases of the circulatory system...........	155	153	308	1.81	3.10	2.28	11.96	11.23	11.59
IV. Diseases of the respiratory system...........	93	237	330	1.09	4.80	2.44	7.18	17.40	12.41
V. Diseases of the digestive system................	146	125	271	1.71	2.53	2.01	11.26	9.18	10.20
VI. Diseases of the genito-urinary system and its adnexa................	150	116	266	1.76	2.35	1.97	11.57	8.52	10.01
VII. The puerperal state.....	21	25	46	.25	.51	.34	1.62	1.84	1.72
VIII. Diseases of the skin and cellular tissue..........	8	4	12	.09	.08	.09	.62	.29	.44
IX. Diseases of the organs of locomotion............	1	0	1	.01	.02	.01	.08	.00	.04
X. Malformations..........	15	5	20	.18	.10	.15	1.16	.37	.75
XI. Early infancy............	84	93	177	.98	1.88	1.31	6.48	6.82	6.66
XII. Old age..................	11	8	19	.13	.16	.14	.85	.59	.72
XIII. External causes..........	108	102	210	1.26	2.06	1.56	8.34	7.49	7.91
XIV. Ill-defined diseases.......	11	34	45	.13	.69	.33	.85	2.50	1.69
Total deaths from all causes	1,296	1,362	2,658	15.16	27.56	19.70	100.00	100.00	100.00

TABLE No. 21.

Giving Death Rate and Per Cent. of Deaths at Different Age Periods.

AGE PERIODS	ACTUAL NUMBER OF DEATHS			DEATH RATE PER 1,000 LIVING AT ALL AGES			PER CENT. OF TOTAL MORTALITY		
	White	Colored	Total	White	Colored	Total	White	Colored	Total
Less than 1 day	40	40	80	.47	.81	.59	3.08	2.94	3.01
Between 1 day and 1 week	19	26	45	.22	.53	.34	1.47	1.91	1.69
First week	59	66	125	.69	1.34	.93	4.55	4.85	4.70
2nd, 3rd and 4th weeks	22	41	63	.26	.83	.47	1.70	3.01	2.37
First month	81	107	188	.95	2.17	1.40	6.25	7.86	7.07
1 to 3 months	47	49	96	.55	.99	.71	3.62	3.60	3.62
3 to 6 months	49	62	111	.57	1.25	.82	3.78	4.55	4.17
6 to 12 months	46	68	114	.54	1.38	.84	3.55	4.99	4.29
First year	223	286	509	2.61	5.79	3.77	17.20	21.00	19.15
Second year	25	61	86	.29	1.23	.64	1.93	4.48	3.23
Third year	13	24	37	.15	.49	.27	1.00	1.76	1.39
Fourth year	5	11	16	.06	.22	.12	.39	.80	.60
Fifth year	4	8	12	.05	.16	.09	.31	.59	.45
Total under 5 years	270	390	660	3.16	7.89	4.89	20.83	28.63	24.82
5 to 10 years	16	24	40	.19	.49	.30	1.23	1.76	1.50
10 to 15 years	12	14	26	.14	.28	.19	.93	1.03	.98
15 to 20 years	28	57	85	.33	1.15	.63	2.16	4.19	3.20
20 to 25 years	36	96	132	.42	1.94	.98	2.78	7.05	4.97
25 to 30 years	60	92	152	.71	1.86	1.13	4.63	6.76	5.72
30 to 35 years	52	102	154	.60	2.06	1.14	4.01	7.50	5.79
35 to 40 years	58	88	146	.68	1.78	1.08	4.47	6.46	5.50
40 to 45 years	64	94	158	.75	1.90	1.17	4.94	6 90	5.94
45 to 50 years	60	80	140	.70	1.62	1.04	4.63	5.88	5.27
50 to 55 years	75	98	173	.88	1.98	1.29	5.78	7.20	6.50
55 to 60 years	95	72	167	1.11	1.46	1.24	7.33	5.29	6.28
60 to 65 years	103	62	165	1.21	1.26	1.22	7.95	4.55	6.21
65 to 70 years	107	40	147	1 25	.81	1.09	8.26	2.94	5.53
70 to 75 years	102	22	124	1.20	.45	.92	7.88	1.61	4.67
75 to 80 years	73	20	93	.85	.41	.69	5.63	1.47	3.50
80 to 85 years	54	6	60	.63	.12	.44	4.16	.41	2.26
85 to 90 years	21	1	22	.24	.02	.16	1.62	.07	.83
90 to 95 years	8	2	10	.09	.04	.07	.62	.15	.38
95 to 100 years	1	0	1	.01	.00	.01	.08	....	.04
Over 100 years	1	2	3	.01	.04	.02	.08	.15	.11
Total	1,296	1,362	2,658	15.16	27.56	19.70	100.00	100.00	100.00

TABLE No. 22

Showing the Number of Nonresidents Buried Here and their Color.

	White	Colored	Total
NON-RESIDENTS	394	142	536

Showing the Number of Persons Who Died Here and were Buried Elsewhere and Their Color.

	White	Colored	Total
TRANSIT PERMITS GRANTED	233	221	454

TABLE No. 23

Showing Number of Typhoid Fever Cases Reported to the Health Department, and the Number of Deaths for Each Month in 1914

MONTH	Cases on hand at beginning of month	Cases Reported in Month			Total under treatment	Deaths in Month			Recoveries in Month	Total Discharges	Cases on hand at end of month
		White	Colored	Total		White	Colored	Total			
January	5*	5	2	7	12	2	1	3	3	6	6
February	6	5	1	6	12	0	0	0	9	9	3
March	3	3	0	3	6	0	1	1	3	4	2
April	2	5	1	6	8	0	0	0	3	3	5
May	5	1	1	2	7	1	1	2	4	6	1
June	1	9	6	15	16	0	1	1	5	6	10
July	10	16	10	26	36	1	1	2	10	12	24
August	24	19	8	27	51	1	3	4	23	27	24
September	24	8	11	19	43	1	2	3	19	22	21
October	21	13	6	19	40	0	0	0	24	24	16
November	16	7	0	7	23	1	0	1	15	16	7
December	7	7	4	11	18	1	1	2	9	11	7†
Summary for the year	124	98	50	148	272	8	11	19	127	146	126

*Cases on hand at the beginning of 1914.
†Cases on hand at the close of 1914.

TABLE No. 24

Showing Number of Cases of Diphtheria, Scarlet Fever and Measles Reported to the Health Department, and the Deaths from These Diseases During Each Month of 1914

MONTHS	DIPHTHERIA						SCARLET FEVER						MEASLES					
	Cases			Deaths			Cases			Deaths			Cases			Deaths		
	White	Colored	Total	White	Colored	Total	White	Colored	Total	White	Colored	Total	White	Colored	Total	White	Colored	Total
January	11	0	11	0	0	0	39	3	42	0	0	0	4	2	6	0	0	0
February	5	1	6	0	0	0	29	1	30	1	0	1	13	2	15	0	0	0
March	10	0	10	0	0	0	14	14	28	0	0	0	60	11	71	0	0	0
April	0	0	0	0	0	0	5	5	10	0	0	0	46	4	50	1	0	1
May	1	0	1	0	0	0	7	1	8	0	0	0	16	2	18	0	0	0
June	1	0	1	0	0	0	7	0	7	0	0	0	5	0	5	0	0	0
July	6	1	7	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0
August	8	2	10	1	0	1	5	0	5	0	0	0	0	0	0	0	0	0
September	23	3	26	0	1	1	13	1	14	0	0	0	0	0	0	0	0	0
October	54	5	59	2	0	2	27	3	30	0	0	0	0	0	0	0	0	0
November	39	2	41	0	0	0	11	4	15	1	0	1	1	0	1	0	0	0
December	36	0	36	0	0	0	10	0	10	0	0	0	1	0	1	0	0	0
Total	194	14	208	3	1	4	171	32	203	2	0	2	146	21	167	1	0	1

TABLE No. 25.

Showing Numeer of Cases of Whooping Cough, Chickenpox and Smallprx Reported to the Health Department, and the Number of Deaths for Each Month of 1914.

MONTHS	WHOOPING COUGH						CHICKENPOX						SMALLPOX					
	Cases			Deaths			Cases			Deaths			Cases			Deaths		
	White	Colored	Total	White	Colored	Total	White	Colored	Total	White	Colored	Total	White	Colored	Total	White	Colored	Total
January	86	4	90	4	4	8	44	19	63	0	0	0	6	0	6	0	0	0
February	35	9	44	4	4	8	38	9	47	0	0	0	1	20	21	0	0	0
March	34	24	58	1	6	7	35	5	40	0	0	0	0	13	13	0	0	0
April	9	20	29	2	7	9	13	6	19	0	0	0	0	1	1	0	0	0
May	17	19	36	3	8	11	11	7	18	0	0	0	1	4	5	0	0	0
June	12	10	22	1	3	4	9	1	10	0	0	0	1	0	1	0	0	0
July	4	5	9	1	3	4	4	0	4	0	0	0	0	0	0	0	0	0
August	2	2	4	1	4	5	0	0	0	0	0	0	0	2	2	0	0	0
September	4	0	4	0	5	5	1	0	1	0	0	0	0	0	0	0	0	0
October	2	0	2	0	0	0	5	1	6	0	0	0	0	0	0	0	0	0
November	0	1	1	0	0	0	5	3	8	0	0	0	0	0	0	0	0	0
December	3	0	3	0	0	0	14	4	18	0	0	0	0	0	0	0	0	0
Total	208	94	302	17	44	61	179	55	234	0	0	0	9	40	49	0	0	0

TABLE No. 26

*Meteorological Observations, 1914**

MONTH	Highest Degree	Lowest Degree	Mean Degree	Rainfall in Inches
January	73	13	42	3.65
February	64	8	35	3.27
March	76	16	42	3.66
April	92	30	56	1.28
May	95	41	69	2.50
June	100	52	76	2.76
July	98	57	77	3.00
August	101	57	78	2.42
September	98	41	68	1.47
October	85	29	62	1 67
November	80	21	48	2.20
December	68	7	36	4.95
Total	....	....	....	32.83

*From reports of United States Weather Bureau.

REPORT OF MEDICAL INSPECTOR.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to submit herewith my report as Medical Inspector for the year ending December 31, 1914.

This report covers only the routine work done in connection with contagious and infectious diseases (which in the main has been the same ever since the office of Medical Inspector was established), and fails to mention many duties, such as answering inquiries regarding duration of quarantine, keeping records, inspecting children both in schools and at their homes for contagious diseases, and numerous duties that occur inside and outside of the office that consume a great deal of time.

The work of the Medical Inspector has been greatly increased by the annexation in November of 13 square miles, with 18,000 or more people scattered over this large area, with unnumbered houses and bad streets and roads to contend with, making it impossible for one man to do justice to the important work assigned him. Cases that need immediate attention, such as laryngeal diphtheria and smallpox, will have to go unvisited for a long period of time, owing to the increase in the Medical Inspector's work. It is very important for the Medical Inspector to see all cases suspected of being laryngeal diphtheria as soon as this office is notified, since the average practitioner's experience with this disease is very limited, as he seldom sees a case; consequently he is not as well qualified to diagnose the disease or tell when intubation is needed as one who is constantly seeing such cases.

Since annexation there have been very few cases of contagious diseases occurring in the city, consequently the work has been light compared to what it usually is at this time of the year. This, together with the fact that since annexation an extra clerk has kept all contagious disease records, accounts for my having been able to look after the work thus far. Should an epidemic of any contagious disease occur, or should the Department wish to try any new plans in connection with contagious disease, extra help will have to be secured. Provision should be made whereby there would be no delay in getting extra help in order to cut short an epidemic or take care of the extra work which at times one Medical Inspector will not be able to look after.

I have experienced very little trouble during the year in enforcing the quarantine rules. In two instances I had to assert the authority given me. One was to quarantine a whole household for one day for not regarding internal quarantine, while the other instance was to stop fleeing negroes who had been exposed to smallpox and vaccinate them.

In nearly every instance the instructions (both written and oral) have been gratefully received, though I realize the difficulty in carrying them out when the mother has a large family of young children, with limited space, and no one but herself to look after the sick and the well children. These cases are revisited, in order to get the best quarantine possible. By the use of the telephone the efficiency of my work has been greatly increased. Those in charge of contagious cases are requested to notify the Health Department if secondary cases occur and to call on us if they feel they do not understand the handling of any case or when new problems come up in regard to quarantine.

It has been my purpose to get the physicians and more especially the laity in close touch with the work of the City Health Department, assuring them that mutual benefit will result, and that the Health Department stands always ready to answer inquiries in regard to its scope of work.

The results obtained in handling contagious and infectious diseases and the records established during the past year are very gratifying. There were fewer cases of typhoid fever and fewer deaths from that cause during the year, while the number of deaths from diphtheria were 50 per cent. under the two preceding years. Secondary cases have been rare where the instructions were carefully followed. Of course, in many instances one or more cases had developed before the first case was recognized and isolated.

In no instance during 1914 was milk or water under suspicion of conveying infectious diseases. During the year four cases of typhoid fever were traced to a dinner given at a very prominent church in our city. Blood tests were made from all the colored servants who helped with the food at the church, but with no positive results. The food came from twenty or more homes, making it difficult to find the source of infection, which undoubtedly was caused by a carrier.

During the year I found several children with infectious diseases attending school. These children are generally absent from four to ten days before they are physically able to return. In many instances physicians had been called but failed to recognize the condition as contagious. To prevent the recurrence of this I suggested, first to Dr. Levy, and then to Dr. Ennett, Medical Inspector of Schools, that some rule be adopted to prevent this. As a result it was agreed that any child absent from school four days or more should be questioned and them examined by the school physician before being readmitted, unless the principal was satisfied that the absence was not due to sickness. By enforcing this rule we hope to prevent to a great extent the spread of contagion in schools.

Table Showing Visits Made by Medical Inspector in 1914.

MONTH	Typhoid Fever	Diphtheria	Scarlet Fever	Measles	Chickenpox	Smallpox	Vaccinations	Diarrhea and Enteritis	Other Causes	Total
January	12	77	130	6	90	120	200	3	88	726
February	8	10	124	14	50	210	330	0	12	758
March	5	12	120	71	50	15	77	0	92	442
April	7	0	73	75	21	10	10	1	31	228
May	4	0	32	18	20	8	16	12	29	139
June	19	1	24	5	12	10	9	105	33	218
July	38	0	40	0	4	0	12	60	80	234
August	42	10	60	0	0	10	8	17	82	229
September	32	72	92	0	1	5	66	8	40	316
October	21	73	120	0	6	0	5	12	15	252
November	9	62	123	1	8	0	4	0	33	240
December	15	52	23	4	18	0	1	0	11	124
Total	212	369	961	194	280	388	738	218	546	3,906

Table Showing Diphtheria Cultures Taken in 1914.

MONTH	DIPHTHERIA CULTURES TAKEN		
	Diagnosis	Release	Total
January	24	54	78
February	6	15	21
March	16	16	32
April	19	24	43
May	8	0	8
June	3	4	7
July	4	6	10
August	16	35	51
September	29	43	72
October	173	179	352
November	233	66	299
December	183	128	311
Total	714	570	1,284

TYPHOID FEVER.

All previous records for typhoid fever were lowered in 1914, there having been only 148 cases and 19 deaths. The best previous record was in 1912, when there were 208 cases and 22 deaths.

The year did not start in promisingly, there having been 3 deaths in January. One of these occurred among the 5 cases carried over from 1913, while out of the 5 cases reported in January 2 terminated fatally.

Of the 148 cases of typhoid reported during 1914, 27 were in children between the ages of five and ten years, and 6 between two and a half and five years, making a total of 33 cases, or 22 per cent. of the total number of cases reported under ten years of age. Mistaken diagnosis, I believe, accounts for the greater number of the cases under ten years of age; for many of the subsequent histories did not bear out the diagnosis of typhoid. Richmond's typhoid record has suffered tremendously in the past from bad diagnoses. Physicians are inclined to call all cases of prolonged. unaccountable fever typhoid, not stopping long enough to think that there are many, many diseases that simulate typhoid and can produce what is known as the typhoid state. To prevent this from recurring, the blood culture as a diagnostic means has been employed during the past year, with excellent results, not merely for its positive findings, but also for its negative results. The doubtful cases are the ones for which the blood culture is most needed, consequently more turn out negative than positive.

Widals and malaria specimens have been taken and examined as a routine when taking a blood culture; a differential count has been made in the very doubtful cases. This has helped clear up the diagnosis in quite a number of cases during the year. In several instances the count clearly showed the presence of pyogenic infection. In every instance when the blood culture was negative, the physician was urged to go further into the case. As a result, throat infections, empyema, septicemia, ear infections, septic endocarditis, tuberculosis, and other diseases that simulate typhoid have been found, while, on the other hand, cases not thought to be typhoid were found to be positive.

There were 121 blood cultures examined in the city laboratory in 1914, and 56 of that number were taken by me. Besides, there were quite a number of blood cultures made by private laboratory men. This is more than twice as many blood cultures as were examined in any previous year.

Our 1914 typhoid was of a very severe type, as shown by the prolonged and severe course of the disease in a majarity of the cases and by the high case fatality. The high case fatality was real and was not due to incomplete reporting of cases. On the contrary, fuller reports than ever before were secured. This was especially true of cases in hospitals, in connection with which there has heretofore been considerable difficulty, it having been found necessary in previous years to pay repeated visits to our various hospitals in order to locate unreported cases. By placing the responsibility for reporting all contagious cases in our hospitals on the hospital superintendents, rather than on the attending physicians or the house staff far better returns were secured in 1914.

In no instance during the year was a case of typhoid found directly or indirectly traceable to milk or water supply, notwithstanding the fact that these two means of conveying infection were in every case carefully considered. In two instances the food was questioned. In one of these a mother and three children were taken down with typhoid within a six-day period. The mother gave a history of having had typhoid seven years previous. There were no other cases in that neighborhood at that time. The other instance was when 4 persons (out of 150) who had eaten dinner at a church entertainment were taken with typhiod. A fifth case due to the same cause developed after January first, and a secondary case developed—also after January first—in each of two homes, making 7 cases in all attributable, directly or indirectly, to this dinner.

Out of the 148 cases of typhoid, 92 were contracted in Richmond, 14 of which terminated fatally, giving a case fatality of 15 per cent. Among the cases contracted outside of Richmond, of which there were 56, there were 5 deaths, giving a case fatality of 9 per cent.

During the year 1914 there were 10 cases of typhoid fever in homes which, owing to no available sewer, had to use dry closets. Of these 10 cases 5 occurred in one home. These 5 cases all recovered. Of the remaining 5 cases 3 died, giving a case fatality of 30 per cent. of all cases occurring on premises using dry closets.

While the above number of cases is too small to furnish any conclusion, yet with the knowledge that in the South, summer typhoid spreads from local foci instead of by water and milk, as it was once thought, it is safe to assume that the privy is the greatest menace to public health that we have, that it cannot be made safe, and that for Southern cities to get the lowest rate possible they must do away with privies entirely by sewer connections.

Of the 19 deaths from typhoid fever in 1914, 8 were white and 11 colored.

Dr. Levy's report shows that the diagnosis was positive in 15 of the fatal cases and extremely doubtful in 4. By referring back a brief history of each fatal case of typhoid fever will be found.

Table Showing the Number of Cases, Deaths and Death Rate from Typhoid Fever for Each Year from 1907 to 1914, Inclusive.

YEAR	CASES REPORTED			DEATHS			DEATH RATE PER 100,000		
	White	Colored	Total	White	Colored	Total	White	Colored	Total
1907	395	100	495	37	10	47	52.5	23.3	41.4
1908	388	106	494	39	18	57	54.6	41.5	49.7
1909	293	83	376	18	10	28	24.9	22.8	24.1
1910	197	66	263	15	13	28	18.6	27.5	21 9
1911	188	63	251	16	7	23	19.6	14.7	17.8
1912	147	61	208	16	6	22	19.4	12.5	16.8
1913	178	55	233	18	9	27	21.6	18.5	20.4
1914	98	50	148	8	11	19	9.4	22.2	14 1

Table Showing Cases of Typhoid Fever Contracted In and Out of the City During 1914.

Cases certainly contracted in city	84	
Cases in which information was not conclusive:		
2 probably contracted in city (probability 75%)	2	
11 with equal probability (probability 50%)	5	
2 possibly contracted in city (probability 25%)	1	
Total cases contracted in city (known and estimated)	92	62.2 per cent.
Cases certainly contracted out of city (known and estimated)	56	37.8 per cent.

Table Showing Deaths and Death Rate from Typhoid Fever in 1914.

	No. of Deaths	Death Rate per 100,000
Total deaths	19	14.1
White	8	9.4
Colored	11	22.2
Contracted in Richmond	14	10.4
White	7	8.2
Colored	7	14.2
Contracted out of Richmond	5	3.7
White	1	1.2
Colored	4	8.1

Table Showing the Case Fatality of Typhoid Fever in 1914.

CASES	No. of Cases	No. Cases Terminated	Deaths	Case Fatality Per Cent.
On hand January 1 1914	5	5	1	20.0*
Reported in 1914	148	141	18	12.8
Total under treatment in 1914	153	146	19	13.0
Cases Contracted in 1914				
White	98	93	7	7.5*
Colored	50	48	11	22.9
Contracted in Richmond (estimated)	92	86	14	16.3
Contracted out of Richmond (estimated)	56	55	5	9.1
Corrected figures for 1913, from final outcome of all cases reported during the year *	236	236	28	11.9

*When the 1913 Annual Report was submitted, 5 of the reported cases during that year were still on hand. One (1) of them subsequently died.

TYPHUS FEVER.

During the month of July there were sent to one of our hospitals two cases of suspected typhoid fever, which turned out to be actually typhus fever.

Case 1. White male, 61 years old; occupation, carpenter; became ill June 28th at Laurel, Virginia. The onset of the disease started with profound stupor, headache, backache, decided chills, eyes were red, tongue coated, temperature ranging from 102 to 104, pulse 68 to 88. On July 5th he was sent to one of our hospitals, where a very slight petechial eruption was noticed on his shoulders and thighs. This eruption became more intense and spread over the entire body, including the palms of his hands and soles of his feet. On the eleventh day of the disease he was unconscious, restless, vomiting, and defecating involuntarily. He was in this state (with the exception of a drop in temperature) for 22 days. Then he began to get well, not fully recovering until the 33rd day of illness.

Laboratory reports: blood culture, Widal, malaria, spinal fluid and urine—all negative; blood count, normal.

This case was seen and the diagnosis of typhus was confirmed by laboratory tests done by one of the Government epidemiologists from Washington.

Case 2. White male, 68 years old, lived on a farm six miles outside of Richmond and two miles from Case 1; no history of contact with the other case. The onset was similar to the other case, with symptoms less severe. He was taken sick July 20th. Seven days later a petechial eruption appeared on his shoulders, gradually spreading over the entire body. The disease ran the same course, except that it was milder in form than Case 1.

Laboratory findings: blood culture, Widal, malaria, and urine analyses negative. In this case the white blood cell count was 16,000; polymorphonuclear, 68; and lymphycytes, 9 per cent.

He made a slow but uneventful recovery.

These two cases should impress upon us the importance of keeping a close watch on suspected typhoid cases, as both of the above cases were reported as such. With the information we have at hand, typhus fever, or Brill's disease, is far more prevalent in the South than we think, and cases have been occurring which were never recognized.

Prior to these two cases we became suspicious of a case that looked like typhus fever, but was not thought to be typhus by one of the Government epidemiologists, although the course of the disease was somewhat parallel with the two above mentioned cases.

DIPHTHERIA.

During the year 1914 there were 208 cases of diphtheria reported, which was 39 cases more than were reported in 1913, and 2 more cases than reported in 1912. While there were 39 more cases of diphtheria reported in 1914 than in 1913, there were only 4 deaths from this disease, against 8 deaths from the same cause in each of the two preceding years, giving a case fatality in 1914 of 1.9, while in 1913 it was 4.7. The low case fatality in 1914 is not accounted for by the mildness of the disease—on the contrary, we had a very severe type of diphtheria, as shown by the very high per cent. of cases that were laryngeal. It is accounted for by the prompt recognition of the majority of cases and the free use of antitoxin in all cases, also by the laryngeal cases being promptly reported to the Health Department as soon as diphtheria was suspected. These cases were always promptly visited and the Consultant, Dr. Lipscomb, called in when intubation was necessary. I cannot speak too highly of Dr. Lipscomb in connection with this work; for without the able assistance that he gave the case fatality would have been much higher.

In this connection I wish to mention the excellent work of the contagious disease nurse. The Board of Health authorized me to put a nurse in homes where they were unable to secure one to look after a case of diphtheria that needed the attention of one trained in handling this disease. This nurse has been used in a great many desperate cases with phenomenal success. This also helps to account for the few deaths attributed to diphtheria in 1914, and we hope by this means to lower the death rate still further in 1915.

During the seven months of 1913 that I held my present position, I took cultures from the throats and noses of all school children in the house before releasing a case of diphtheria, in order to detect carriers. During the past year I have gone further, by taking swabs from every child in the house before releasing a case. By doing this a number of carriers have been recognized and quarantined until two consecutive negative swabs were taken. In no instance has a return case developed in the same home nor has a case been found traceable to a carrier's being let out while still infectious.

No well children are allowed to go off the premises where there is a case of diphtheria or scarlet fever. This rule, while drastic and hard (for the children as well as the parents), is strictly enforced, and I believe is necessary to prevent the spread of contagion.

During the year diphtheria broke out in several institutions, two of which were orphanages, where over 38 children in each institution were exposed before the case was recognized. In both instances the case was promptly removed to the City Home. In both of the above instances cultures were taken from the throats and noses of every child and every employee. In one of the instances two positive and three suspicious cultures were found and quarantined until two consecutive negative cultures were gotten from each one. One of the two that were positive afterwards developed a mild case of diphtheria. In the other orphanage the cultures revealed one carrier. This child was sent to the City Home and kept there until two consecutive negative cultures were gotten from the nose and throat.

Diphtheria broke out among the nurses in three of our hospitals. In each instance swabs were taken from all the nurses, also from the patients (under 21 years of age) who came in contact with the case. Carriers were found among the nurses in each of the above mentioned instances. With isolation of cases and carriers, no trouble was experienced in stopping the spread of the infection. One of the nurses who proved to be a carrier, and who afterwards developed diphtheria, fixed the trays that went to the patients under treatment in that institution. Cultures were taken from all the children and several of the adults, and reports showed them all to be negative.

There were 3 cases of diphtheria imported during 1914, one from Washington, D. C., one from Philadelphia, and one from near Danville, Virginia. All three of these cases were of a very severe type. The case that came from Washington was a mother, 35 years of age, with two children. Her two children and one other child in the house with her contracted the disease from her.

The case from Philadelphia was a man 26 years old, who was taken sick in a hotel the night he arrived. I saw the case with the attending physician the next morning, and we both thought he had a bad case of diphtheria. Antitoxin was administered. Four cultures were taken from the nose and throat before a positive one was secured.

The case imported from near Danville, Va., was a child 2 years old, sent here to be given electrical treatment for general paralysis. The child gave a history of having had a sore throat six weeks previous to coming here. A culture was taken from the throat that was negative. I heard about this case and took a culture from the nose and throat that proved positive. The child was quarantined, and antitoxin given in large doses, which promptly cleared up the infection. The child gradually improved.

These last two cases show the importance of taking more than one culture when diphtheria is strongly suspected, if the diagnosis is to be made only by getting a positive culture. No doubt there are many cases of diphtheria (excepting laryngeal), as positive cases are rare, in which one or even two cultures from the nose and throat will not reveal the infection, consequently the cases go unrecognized, untreated, spreading the infection in many instances. No doubt sequellae from unrecognized and doubtful cases are more prevalent than is thought; for the causes are seldom found.

I would like to urge the physicians always to take a swab from the nose as well as the throat in every suspected case of diphtheria, and not to stop with one negative culture if the clinical evidence suggests diphtheria, but to give antitoxin and take more cultures.

Out of the 208 cases of diphtheria reported, there were 19 cases among adults.

Summary of Diphtheria Statistics.

Total number of cases reported	208
Total number of deaths	4
Case fatality	1.9
Death rate per 100,000	3.0

SCARLET FEVER.

There were 203 cases of scarlet fever reported in 1914, with 2 deaths, against 266 cases and 5 deaths in 1913, a decrease of 63 cases and 3 deaths. For the most part the disease has been very mild, so mild in many cases that the diagnosis was extremely hard to make, while in many instances cases went unrecognized, and in other instances they were not sick enough to call a physician.

Of the 203 cases reported, 171 cases were white and 32 colored, and 17 of these cases occurred in grown persons.

The distribution of scarlet fever was more or less general over the entire city, but there were three localities that had more cases than other parts of the city; namely, Fairmount, from 20th to 25th street, which had 21 cases reported; the territory from Marshall street on the north, 29th street on the west and 31st street on the east, which had 13 cases reported; and a district in the West End from Main on the north to Beverly on the south, west of Meadow to the Boulevard, which had about 25 cases reported.

There was no case of scarlet fever in any of our institutions during the year.

On several occasions schools were visited and the children inspected for sore throats and peeling. By this means quite a number of convalescing cases of scarlet fever were detected, sent home, and then re-quarantined until well.

The practice of taking swabs from all scarlet fever throats that showed a distinct membrane, also later in the disease taking swabs from the nose and ears if a discharge was present, was continued. By this practice 3 cases of diphtheria, complicating scarlet fever, were detected. The discharges in these cases promptly cleared up after the administering of antitoxin.

There were 2 scarlet fever deaths in 1914, both dying from acute nephritis.

Summary of Scarlet Fever Statistics for 1914.

Total number of cases reported	203
Total number of deaths	2
Case fatality	.98
Death rate per 100,000	1.5

MEASLES.

The year 1914 was a light year for measles, there being only 167 cases reported during the year. Quite a large per cent. of the cases reported were German measles, the physicians failing to distinguish between the two diseases in their reports. German measles is not a reportable disease.

There must have been several hundred cases of German measles in the city during the first six months of the year; for I saw one hundred or more cases that gave difficulty in diagnosis, this being only a very small per cent. of the total number of cases that occurred in the city. Many of the cases gave a history of having had measles during the 1912-1913 epidemic.

Summary of Measles Statistics.

Total number of cases reported	167
White	146
Colored	21
Number of deaths	1
Case fatality	0.59
Death rate per 100,000	.7

CHICKENPOX.

There were 234 cases of chickenpox reported during the year 1914. Out of this number 174 cases occurred in whites and 60 among the blacks.

The most striking thing about chickenpox during the year was that it frequently attacked adults, more especially men.

SMALLPOX.

More cases of smallpox were reported during the year 1914 than in any one year since the reorganization of the Health Department in 1906. There were 49 cases of smallpox reported in 1914. Nearly every case that was reported during the year was either imported or directly traceable to an imported case. Quite a large per cent. of the cases reported came from

North Carolina, while other cases came from various parts of Virginia where smallpox was prevalent.

A great deal of my time was taken during the first six months of 1914 in giving medical attention to the patients at the smallpox hospital. Owing to the location of the hospital and the condition of the roads, it was necessary to use a horse and buggy part of the time in order to get there. It takes twice as long to make the trip with the horse as it does with the automobile. Visits were made daily or every other day while the smallpox patients were in the hospital. While on several days two or three visits were made while three of the patients were very ill.

Vaccinators were put to work in each neighborhood where a case of smallpox developed, and as a result 1,872 persons were vaccinated.

Brief history of cases reported by months: A case of smallpox that came from North Carolina was carried over from 1913, also 3 suspects, one a cousin to the above case, and a mother with a fourteen months' old baby. All three had been constantly exposed for a period of five days before the case was found and all vaccinated. The mother and child had a mild type of the disease, while the cousin, a boy 20 years old, who lived with the above case, had an extremely severe case, which bordered on the confluent type, with hemorrhagic spots over his body. He was delirious for hours at a time and had violent convulsions during the height of the disease.

Following these cases was a very severe case in a white male, 42 years of age, who had been six times unsuccessfully vaccinated. No history of exposure could be gotten in this case. A brother who slept with him for several days after he broke out was successfully vaccinated and escaped with a very mild case.

One of the Massey Business College students contracted smallpox while she was spending her Christmas vacation at her home in North Carolina. She attended lectures the day before she broke out. Her roommate, a girl 20 years old (never vaccinated), bathed her, waited on her, and slept with her for two nights after the eruption appeared. She was vaccinated and sent to the hospital for fourteen days, during which time her vaccination showed a good take, protecting her from smallpox. An unvaccinated nurse was in attendance on the above mentioned case. When found, she was vaccinated and watched until the vaccination showed signs of a take, then she was permitted to work.

The student body and teachers of Massey Business College, composed of more than 300 persons, were inspected the morning after the above case was reported, and those who did not show a recent take were vaccinated. The school was permitted to continue its work. No cases developed in the school.

A funeral, attended by more than fifty people, was held in the house with this case of smallpox an hour or so before the case was reported to the Health Department. Notices were put in the papers stating the above circumstances, advising those who were present at the funeral to be immediately vaccinated, and stating that the Health Department would vaccinate those who came to the office without cost. In response to this notice, nearly every one who attended the funeral came to be vaccinated.

During the month of February, 21 cases of smallpox were reported. One of these cases contracted smallpox while visiting in Dinwiddie county. She gave it to two others in the same house. A colored girl from South Richmond contracted smallpox while visiting in Greenville, Virginia, breaking out after coming home. She gave smallpox to 12 other members of her household (their ages ranging from a child 5 months old to a grandmother 60 years old), and from these cases 2 other cases were traced.

A case occurred in a bellboy (colored) at the Jefferson Hotel. All colored employees at the hotel were vaccinated, preventing the spread.

There were 13 cases reported in March. Of these, 5 were imported cases, 6 were cases in which the source of infection could not be traced, and 2 cases were contracted from previous cases.

One of the above mentioned cases occurred in a mother with a two-days' old baby, weighing five pounds. The child was successfully vaccinated, but broke out with a marked case nine days after the mother.

One case of smallpox was reported in April. This was a secondary case.

In May 5 cases were reported, 3 of which were contracted outside of the city. One of the remaining cases was a secondary from a case reported from North Carolina. The other case occurred in a white woman 45 years old, who undoubtedly contracted smallpox from her son, who had an unrecognized case. This person refused to go to the smallpox hospital. The house was quarantined and every member of her family vaccinated.

A colered man who contracted smallpox at Clover, Virginia, broke out in a camp car at the Southern R. R. Shops. The case was promptly sent to the hospital, and the 30 other occupants of the cars were vaccinated. The following day the entire shop force was gone over and over 300 men vaccinated. No secondary cases occurred from this case.

One case of smallpox was reported in June. History: white female, 3 years old, no source of contagion traceable.

Two (2) cases were reported in August. These cases were traced to a case that came from North Carolina, stopping at the house where the two above colored persons lived. This case was well before the two secondary cases were reported.

During the last four months of the year quite a number of suspicious cases of smallpox were reported, but upon investigation were found not to be smallpox.

We were fortunate in not having any deaths from smallpox, as several of the cases were extremely sick, and for quite a while the outcome of three was very doubtful.

During the year I vaccinated 738 persons in the office, besides several hundred on the outside. Vaccinators employed by the Richmond Health Department vaccinated 1,872 persons, as follows:

Primary vaccinations, white,	302	
Primary vaccinations, colored	700	
Total primaries		1,002

Secondary vaccinations, white	327	
Secondary vaccinations, colored	543	
Total secondaries		870
Grand total		1,872

Summary of Smallpox Statistics.

Total number of cases reported	49
Total number of white cases reported	9
Total number of colored cases reported	40
Number of deaths due to smallpox	0

ANNEXED TERRITORY.

On November 5th, when the new territory was annexed, there were 2 cases of scarlet fever and 3 cases of diphtheria under quarantine in the annexed area. These cases were promptly visited and informed of the quarantine rules which were enforced in the city.

During the remainder of November and through the month of December there were 3 cases of typhoid reported, 15 cases of diphtheria, and 9 cases of scarlet fever.

There were no deaths from any of the above mentioned diseases in the annexed territory.

Table of Cases of Contagious Diseases Reported in the Annexed Territory—November 5, 1914, to December 31, 1914.

DISEASE	Reported	Recovered	Died	On Hand January 1, 1915
Typhoid fever	3	1	0	2
Diphtheria	15	9	0	6
Measles	0	0	0	0
Scarlet fever	9	8	0	1
Chickenpox	2	0	0	2
Whooping cough	0	0	0	0
Mumps	2	0	0	2
Smallpox	0	0	0	0
Infantile diarrhea	0	0	0	0
Total	31	18	0	13

I desire to express my sincere gratitude to the physicians of the City for their co-operation and the courtesies they have extended me; for in not one instance has any physician failed to co-operate heartily with me in trying to ascertain the source of contagion and to prevent its further spread, while, on the other hand, they have assisted me greatly. I trust that my office has the good will of every physician in the city, and my desire is to assist them in every way possible.

Respectfully submitted,

B. E. SUMMERS,

Medical Inspector.

REPORT OF BACTERIOLOGIST.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor to submit herewith my report as City Bacteriologist for the year ending December 31, 1914.

The work during 1914 was performed by several men. Mr. Straus, my predecessor, was granted a leave of absence during the winter, when his place was filled by Dr. S. W. Budd, of the Medical College of Virginia. Again, when Mr. Straus resigned his position August 1st, the work was done by Dr. Budd, Dr. E. C. L. Miller and Mr. Straus working in conjunction up to November 23rd, when I was elected successor to Mr. Straus.

There were 3,646 diagnostic specimens examined during the year, which was 674 specimens more than have been examined in this office during any year previous to this one. These specimens were as follows:

		1912		1913		1914	
Diphtheria	**Diagnosis**	1,007		871		1,423	
	Release	691		498		757	
	Total		1,698		1,369		2,180
Typhoid Fever	**Widal tests**	341		437		364	
	Diazo tests	37		38		33	
	Other tests	43		60		121	
	Total		421		535		518
Tuberculosis			733		808		801
Malarial fever			108		129		132
Other diagnostic tests			12		8		15
Total			2,972		2,849		3,646

In addition to the diagnostic work of the laboratory, 1,740 samples of milk and cream were examined, making a total of 5,402 examinations for the year.

TYPHOID FEVER.

While the Widal reaction has been as unsatisfactory as in former years, the blood culture has continued to give very satisfactory results. The blood culture is steadily gaining in popularity, 121 cultures having been examined during 1914, while only 55 were examined during 1913.

Table Showing Comparative Results of the Widal Reaction and Blood Culture Examination, Where Both of These Examinations Were Made.

RESULTS OBTAINED FROM BLOOD CULTURES	RESULTS OF WIDAL REACTION		
	Positive	Negative	Atypical
Positive for typhoid fever..........	15	5	3
Negative for typhoid fever	7	69	7

Of the 23 cases giving positive blood cultures, all proved typhoid clinically.

Of the 7 cases which gave a positive Widal with negative blood culture, 4 proved negative clinically, while 3 ran a typical typhoid course.

Of the 69 cases which gave negative Widal reaction and negative cultures, only one gave positive subsequent history.

Of the 7 cases giving negative blood cultures and atypical Widals, 5 proved negative clinically, 2 positive.

Comparing the two tests, judging by clinical findings, 23, or 100 per cent. of the cases giving positive blood cultures proved clinically typhoid, while 8, or 34.8 per cent., of the Widal examinations made on the same patients were not positive.

Again, positive Widal reactions were obtained from 4 patients who gave a negative clinical history.

Of the 83 cases giving negative blood cultures, 78 cases, or 94 per cent., were upheld by clinical findings; whereas 13 cases, or 15.7 per cent., of the Widal tests were not substantiated by clinical findings.

It is interesting to note that the length of time elapsing between the date of the first symptoms and the taking of the blood culture in those which prove positive ranged from two to twenty-six days, with an average of about 13 days.

In the six cases which gave negative blood cultures and ran a typhoid course, the cultures were taken three, four, five, nine, fourteen and twenty-one days, respectively, after the first symptoms began; and, as a blood culture is best taken during the first week of the disease, this perhaps explains why several of these were negative.

From these comparisons we therefore consider the superiority of the blood culture over the other laboratory methods of diagnosing typhoid fever to be proved conclusively.

Bacteriological Laboratory—Summary of Diagnostic Work for 1914

MONTHS	PURPOSE OF EXAMINATION	DIPHTHERIA						TYPHOID FEVER						TUBERCULOSIS			MALARIAL				BLOOD CULTURES				Total Examinations of all Kinds
		RESULT OF EXAMINATION							RESULT OF EXAMINATION					RESULT			RESULT				RESULT				
		Positive	Negative	Atypical	Specimen Unsatisfactory	Total		Test	Positive	Negative	Atypical	Total		Positive	Negative	Total	Positive	Negative	Specimen Unsatisfactory	Total	Positive	Negative	Specimen Unsatisfactory	Total	
January......	Diagnosis....	7	77	2	0	86	148	Widal	1	14	5	20	21	10	46	56	0	8	0	8	1	6	2	9	242
	Release......	18	44	0	0	62		Diazo	0	1	0	1													
February.....	Diagnosis....	3	46	0	0	49	67	Widal	1	18	3	22	24	28	52	80	0	4	0	4	0	2	0	2	177
	Release......	1	17	0	0	18		Diazo	0	2	0	2													
March.........	Diagnosis....	1	65	0	0	66	85	Widal	0	17	3	20	22	16	68	84	0	6	0	6	0	5	0	5	202
	Release......	2	17	0	0	19		Diazo	1	1	0	2													
April.........	Diagnosis....	0	41	0	0	41	51	Widal	12	0	0	12	14	10	58	68	0	7	0	7	1	3	0	4	144
	Release.....	0	10	0	0	10		Diazo	0	2	0	2													
May..........	Diagnosis....	1	32	0	0	33	33	Widal	1	20	2	23	26	19	54	73	1	10	0	11	1	3	1	5	148
	Release......	0	0	0	0	0		Diazo	1	2	0	3													
June..........	Diagnosis....	1	13	0	0	14	20	Widal	2	36	3	41	44	22	39	61	0	16	0	16	0	10	0	10	151
	Release......	2	4	0	0	6		Diazo	1	2	0	3													
July....	Diagnosis....	3	28	0	0	31	40	Widal	4	48	7	59	61	21	44	65	0	19	0	19	7	20	1	28	213
	Release......	3	6	0	0	9		Diazo	0	2	0	2													
August........	Diagnosis....	11	15	0	0	26	65	Widal	6	35	3	44	48	20	50	70	2	11	1	14	5	9	0	14	211
	Release......	19	20	0	0	39		Diazo	1	3	0	4													

September....	Diagnosis....	27	36	0	0	63	109	Widal	7	33	4	44	50	24	36	60	1	20	1	22	5	18	1	24	265
	Release......	27	19	0	0	46		Diazo	3	3	0	6													
October.......	Diagnosis....	64	207	10	0	281	501	Widal	8	6	6	20	20	16	54	70	0	6	0	6	3	5	2	10	607
	Release	57	163	0	0	220		Diazo	0	0	0	0													
November....	Diagnosis....	45	356	10	1	412	585	Widal	8	18	9	35	42	15	47	62	0	8	1	9	0	6	0	6	704
	Release......	38	135	0	0	173		Diazo	0	7	0	7													
December....	Diagnosis....	38	239	16	0	293	448	Widal	6	12	6	24	25	8	44	52	0	10	0	10	1	3	0	4	539
	Release......	49	106	0	0	155		Diazo	0	1	0	1													
	Diagnosis...........................						1395	Widal....................					364	Positive ..		209	Positive			4	Positive			24	
	Release............................						757	Diazo					33	Negetive..		592	Negative			125	Negative			90	
																	Unsatisfactory			3	Unsatisfactory.			7	
Totals for 1914	Total...............................						2152	Total....................					397	Total....		801	Total			132	Total........			121	3,603

In addition to the above routine examinations the following examinations were also made:

Diphtheria—Direct Swab Examinations..............................	10	10
Diphtheria—Five Hour Cultures...	18	18
Para-Typhoid Fever Agglutination Tests	15	15
		3,646

BACTERIOLOGICAL EXAMINATION OF MILK.

During the year 1914 bacteriologlical examination was made of 1,742 samples of milk and cream, as against 1,622 samples examined during 1913, an increase 120 samples.

These samples were examined as follows:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
138	163	169	175	161	128	158	141	133	142	142	122......	1,742

Of the 1,742 samples, 52 were samples of milk and cream which had been pasteurized; 340 were samples used for churning only; and 1,350 were samples of regular market milk.

Of the milk used in Richmond only about 5 per cent. is retailed by the producer, while about 95 per cent. is retailed by the two distributing plants of the city. Both of these plants started pasteurizing the bulk of their milk toward the end of the year 1914, with the result that the bacterial count of such milk is undoubtedly lowered.

TABLE A

Bacteriological Examination of Regular Market Milk, Showing the Number of Samples in Each Class.

CLASS Bacteria per c.c.	January	February	March	April	May	June	July	August	September	October	November	December	Total
Below 10,000	61	76	72	57	64	50	61	61	62	37	39	31	671
10,000 to 50,000	37	34	50	47	53	40	38	28	33	35	30	28	453
50,000 to 100,000	6	10	10	8	7	8	8	5	2	11	7	2	84
100,000 to 250,000	10	11	5	2	5	5	4	6	1	12	4	8	73
250,000 to 500,000	1	4	0	4	2	0	5	1	0	6	2	6	31
500,000 to 1,000,000	1	2	3	0	1	0	1	0	3	3	3	4	21
1,000,000 to 5,000,000	1	1	1	2	1	3	2	0	0	3	0	0	14
Over 5,000,000	0	0	0	0	0	0	0	0	1	2	0	0	3
Number of samples	117	138	141	120	133	106	119	101	102	109	85	79	1,350
Average air temperature at 8 A. M. in Degrees F. on days on which samples were taken	36	28	40	53	65	73	77	78	65	35	42	38	52

TABLE B.

Bacteriological Examination of Regular Market Milk, Showing the Percentage of Samples in Each Class.

CLASS Bacteria per c.c.	January	February	March	April	May	June	July	August	September	October	November	December	Percentage of Total in Each Class
Below 10,000	52.1	55.1	51.1	47.5	48.1	47.2	51.3	60.4	60.8	33.9	45.9	39.2	49.7
10,000 to 50,000	31.6	24.6	35.5	39.1	39.8	37.8	31.9	27.7	32.3	32.1	35.3	35.5	33.6
50,000 to 100,000	5.1	7.3	7.1	6.7	5.3	7.5	6.7	5.0	2.0	10.1	8.2	2.5	6.2
100,000 to 250,000	8.5	8.0	3.5	1.7	3.7	4.7	3.4	5.9	1.0	11.0	4.7	10.1	5.4
250,000 to 500,000	0.9	2.9	0.0	3.3	1.5	0.0	4.2	1.0	0.0	5.5	2.4	7.6	2.3
500,000 to 1,000,000	0.9	1.4	2.1	0.0	0.8	0.0	0.8	0.0	2.9	2.8	3.5	5.1	1.6
1,000,000 to 5,000,000	0.9	0.7	0.7	1.7	0.8	2.8	1.7	0.0	0.0	2.8	0.0	0.0	1.0
Over 5,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.8	0.0	0.0	0.2

TABLE C.

Bacteriological Examination of Cream and Milk Used for Churning Only, Showing the Percentage of Samples in Each Class.

CLASS Bacteria per c.c.	January	February	March	April	May	June	July	August	September	October	November	December	Percentage of Total in Each Class
Below 10,000	42.9	88.0	46.5	31.4	28.6	22.7	20.5	17.5	29.0	20.8	33.3	69.6	35.6
10,000 to 50,000	19.0	4.0	21.4	28.6	32.1	31.8	25.6	20.0	19.3	33.3	41.7	4.4	23.5
50,000 to 100,000	23.8	4.0	7.1	14.3	3.6	13.6	7.7	10.0	12.9	0.0	4.2	4.3	8.8
100,000 to 250,000	9.5	4.0	10.7	8.5	14.3	9.1	10.3	15.0	6.5	20.8	20.8	13.0	11.8
250,000 to 500,000	0.0	0.0	3.6	2.9	7.1	4.6	7.7	2.5	3.2	0.0	0.0	8.7	3.5
500,000 to 1,000,000	4.8	0.0	0.0	11.4	7.1	4.6	7.7	12.5	6.5	16.7	0.0	0.0	6.5
1,000,000 to 5,000,000	0.0	0.0	10.7	2.9	3.6	9.1	12.8	20.0	16.1	4.2	0.0	0.0	7.7
Over 5,000,000	0.0	0.0	0.0	0.0	3.6	4.5	7.7	2.5	6.5	4.2	0.0	0.0	2.6
Number of samples	21	25	28	35	28	22	39	40	31	24	24	23	340

TABLE D.

Bacteriological Examination of Pasteurized Milk, Showing the Percentage of Samples in Each Case.

CLASS Bacteria per c.c.	Oct.	Nov.	Dec.	Percentage of Total in Each Class
500 to 1,000	....	....	7.7	7.7
1,000 to 5,000	....	....	5.8	5.8
5,000 to 10,000	17.3	32.7	1.9	51.9
10,000 to 50,000	....	11.6	19.2	30.8
50,000 to 100,000	....	....	3.8	3.8
Number of samples	9	23	20	52

Table Showing Bacterial Index of the Market Milk Supplk of Richmond for the Years 1911, 1912, 1913 and 1914.

YEAR	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
1911........	89.5	88.3	91.3	90.3	76.2	81.8	77.6	79.4	83.1	84.4	88.0	88.5	85.0
1912........	93.8	92.7	90.1	90.4	86.0	81.8	77.4	72.4	81.1	89.1	86.2	73.2	85.9
1913........	83.3	90.5	90.7	86.3	79.1	77.2	80.9	84.4	85.5	85.8	89.0	87.3	85.0
1914........	88.8	87.9	90.1	89.2	90.0	89.1	87.6	93.1	91.9	77.0	86.6	79.6	87.6

Respectfully submitted,

K. D. GRAVES., M. D.,
City Bacteriologist.

REPORT OF CONSULTANT IN DIPHTHERIA.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor to submit herewith my report of cases of laryngeal diphtheria seen for the Health Department during the year ending December 31, 1914, also appended tabulated statement of laryngeal cases seen for the Health Department for eight years, 1907-1914, inclusive.

INTUBATED			NOT INTUBATED				TOTAL			Case Fatality Per Cent.
Recovered	Died	Total	Case Fatality Per Cent	Recovered	Died	Total	Recovered	Died	Total	
9	0	9	0	9	1	10	18	1	19	5.3

The 9 cases intubated were intubated on first visit. Of the 10 cases in which intubation was postponed upon first visit, none subsequently required intubation. We are gratified to report 100 per cent. recoveries in the cases intubated. This is the high water mark of success in our mortality records in intubation work extending over a period of 8 years. This measure of success is largely accounted for by the following factors, viz: first, physicians are calling for intubation earlier in the case; second, the close watch kept upon intubation cases by Dr. B. E. Summers, the Medical Inspector; and third, that the Health Department furnishes the services of a regular diphtheria nurse to look after intubation cases, greatly to the protection of the patient and to the comfort of the consultant.

There was one death among the laryngeal cases in which intubation was postponed. This occurred in a 10 year old child who, from lack of early medical attention, was moribund when first seen, and while getting sufficient air died a few hours later of septic intoxication.

One case coughed up the tube on the first day, and one on the fifth day, both requiring reintubation. One case coughed up the tube on the second day, three on the fifth day and one on the sixth day, none of which required reintubation.

In intubating one urgent case membrane in the trachea was dislodged and pushed down ahead of the tube, making intubation necessary five minutes later. A cast of the trachea was expelled, and reintubation was not required. One case required 2 intubations, wearing the tube altogether 21 days, while another case, complicated by coexisting pertussis, expelled the tube a great many times within the three weeks' duration of the case.

Notwithstanding the fact that the majority of laryngeal cases fail to show membrane on the tonsils or pharynx, the attending physician should insist upon immediate, liberal doses of antitoxin.

I wish to express my appreciation of the cordial co-operation and valuable assistance rendered by the Medical Inspector, Dr. B. E. Summers, in looking after the many and often urgent needs of the laryngeal cases.

Cases of Larygngeal Diphtheria Seen for the Richmond Health Department for Eight Years, 1907-1914.

YEAR	INTUBATED				NOT INTUBATED			TOTAL			
	Recovered	Died	Total	Case Fatality Per Cent.	Recovered	Died	Total	Recovered	Died	Total	Case Fatality Per Cent.
1907......	5	1	6	16.7	1	0	1	6	1	7	14.3
1908......	3	1	4	25.0	0	0	0	3	1	4	25.0
1909......	5	1	6	16.7	2	0	2	7	1	8	12.5
1910......	14	2	16	12.5	4	0	4	18	2	20	10.0
1911......	22	1	23	4.4	8	1*	9	30	2	32	6.3
1912......	7	2	9	22.2	7	0	7	14	2	16	12.5
1913......	7	4	11	36.4	2	0	2	9	4	13	30.8
1914......	9	0	9	00.0	9	1†	10	18	1	19	5.3
Total..	72	12	84	14.3	33	2	35	105	14	119	11.7

*Congenital stenosis of larynx, making intubation impossible. Died in spite of treacheotomy.

†Neglected septic case, larygngeal symptoms not extreme; died from sepsis in a few hours.

Respectfully submitted,

P. D. LIPSCOMB,
Consultant in Diphtheria.

REPORT OF SMALLPOX HOSPITAL.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have prepared the following report of cases treated at the Smallpox Hospital for the year ending December 31, 1914.

	White			Colored			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Smallpox from Richmond	4	4	8	24	15	39	28	19	47
Smallpox from Henrico County	......	......	......	......	1*	1*	......	1*	1*
Suspects from Richmond	1	2	3	7	10	7	8	12	20
Total	5	6	11	31	26	47	36	32	68

*This patient was taken care of for the Henrico County authorities, and his maintenance paid for by them.

Four (4) of the suspects who were taken to the hospital subsequently developed smallpox.

There were no deaths from smallpox during the year.

Respectfully submitted,

B. E. SUMMERS,
Medical Inspector.

REPORT OF CHIEF NURSE.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor of submitting herewith my report of the work of the nursing staff in connection with

(1) The Prevention of Infant Mortality.
(2) Tuberculosis.

PART I.

The routine work has been the same as in the previous year, but on a larger scale than heretofore, and with results that are most gratifying.

As brought out in previous reports, the work of the nursing staff consists in everything that tends to improve health conditions, and we believe that the greatest good to be derived from our work is that of prevention by education. It is our object to furnish intelligent advice to every mother who needs instruction regarding the care of her baby; to keep in touch with the child from before birth and through babyhood; to advise the mother as to the care of her unborn baby as well as the living child; to show her how to prevent the accidents incident to maternity, and to caution her as to the dangers which come to the child, should it contract an infectious disease of any kind. Therefore, one of the notable features of our work is the following up of birth certificates; special attention being given where delivery is by midwife, and in localities where we would have occasion to believe that the baby might not be properly cared for. Our work has done much to improve the sanitary conditions of the homes in which we visit, and also covers the placing of babies in desirable homes, and the removal of some from those that are undesirable.

My associates, the nurses of the Department, have done splendid work throughout the year, and almost without a break, not one of them having had a severe illness, as was the case in 1913. There have been changes, however, in the personnel of our staff, owing to the marriages of two of them, and the appointment of others to fill the vacancies. The addition of two more nurses to our number, incident to the annexation of suburbs, was most timely, as portions of this acquired territory we found to be greatly in need of instruction regarding both infant welfare and tuberculosis.

According to your suggestion, the nurses of the Department have adopted a uniform, which we find most satisfactory in every way, as it not only gives distinction, but is a great protection to the nurses while in the districts in which they visit.

For some time past we have been meeting once a month with the nurses of the Instructive Visiting Nurse Association and Public School Nurses, to discuss Public Health work in general and the work of each department in particular, with a view to greater co-operation in future.

We have had with us during the year five nurses who were sent to Richmond by the Red Cross Nursing Service, to take a course in Public Health work. They rendered us very efficient help, at the same time expressing great approval of and interest in our methods.

With these few introductory remarks, I will now proceed with my report:

Our work among expectant mothers is gradually growing. It is one of the most interesting branches of our work, and one that is most productive of good results. We have had a larger number on our lists during the past year than ever before, and we have met with their co-operation in every instance, which did much towards making our instruction effective. We regret the proportion of stillbirths, yet I am confident that this number might be greatly reduced were it possible for our nurses to devote more time to the supervision of prenatal cases. But, unfortunately a large proportion of our expectant mothers are not located until late in pregnancy, due to the amount of heavy work on our part, necessary during the summer months, in our fight against infantile diarrhea.

The following table is in illustration of this branch of work:

Mothers Supervised	Visits Paid	Births	Live Births	Stillbirths	Miscarriages	DEATHS OF INFANTS		
						Under 1 day	1 to 7 days	8 days to 1 mo.
314	899	208	196	10	2	0	1	1

DEATHS OF MOTHERS IN CHILDBIRTH			CASES OF ECLAMPSIA		CASES OF OPHTHALMIA NEONATORUM			
Before	During	After	Threatened	Developed	Total Number	Sight saved	Sight totally lost	Sight partially saved
0	1	1	0	2	2	2	0	0

It is with the utmost gratification that I have to report that the number of cases of Opthalmia Neonatorum among all supervised babies has been greatly minimized over any previous year, and every case which came under our observation was successfully treated by physicians who kindly tendered us their services, and to whom we are greatly indebted.

Among other good results, I beg to call your attention to the marked decrease in infantile diarrhea, which we are confident is due to following your instructions in the treatment of same as an infectious disease, paying special attention, as directed by you, to the disinfection of diapers of all babies, and in giving most minute and careful instructions to the cleansing of same, and the disposition of water and faecal matter therefrom.

During the past year we have taken on our list and recorded the histories of 1,581 babies (or, 50.1 per cent. of all births recorded during the year), 708 white and 873 colored. Of this number 225 were dropped for various reasons, such as change of residence; our services not being desired in some instances, nor needed in others. This left 1,356 babies under supervision, besides 986 brought over from the previous year, which were dropped at different periods when our services were no longer deemed necessary. Of the former number, 1,356, there were only 22 deaths from infantile diarrhea; and of the latter number, or 986, there were 8 deaths, making a total of 30 deaths from infantile diarrhea among the entire number of supervised babies. Of the 1,356 supervised babies, there were only 92 deaths from all causes, and 50 of the 986 brought over from 1913.

We are rapidly gaining a foothold in the homes in which we visit, and instead of meeting with opposition or disapproval from the mothers of our supervised babies, as was at first often the case when our work was in its infancy, our visits are now looked forward to by these mothers, and our services often sought. When we are thus welcomed, our work becomes a real pleasure, for we know that mothers who are so eager for help will surely follow instructions, and as a result improvement is marked in the baby's condition on each succeeding visit.

We are also meeting with a great deal of success in persuading mothers to give their babies solely breast milk when possible, and when they have an insufficient supply of breast milk, to supplement same by cow's milk prepared according to our simple formula, at the same time instructing the mother in regard to her own diet, with the hope that improvement in her general health will increase the quantity and enrich the quality of her milk. There are cases, of course, where it is impossible for a baby to be breast-fed, and then it is that we advise the mother to use only cow's milk, modified as above stated, instead of using condensed milk, which we find so many mothers giving their babies when first they are taken under our care.

The greatest drawback to our work is in encountering cases where mothers are too poor to afford cow's milk for their babies, and are therefore forced to feed them on condensed milk. In such cases our instruction is useless, and I would earnestly recommend that some provision be made whereby we may be able to meet this need. We feel deeply indebted to a number of private individuals, interested in the work of the Department, who have given us material aid in supplying milk to babies who would otherwise have suffered.

The following table shows the classification according to feeding of the 1,356 supervised babies:

KIND OF FEEDING	WHITE		COLORED		TOTAL	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
Breast	523	80.4	583	82.6	1,106	81.6
Artificial	85	13.1	61	8 6	146	10.8
Mixed	42	6.5	62	8.8	104	7.6
Total	650	100.0	706	100.0	1,356	100.0

Experience has demonstrated most emphatically the beneficial effects of our work, and the following is one of many instances in which our efforts have met with marked success:

Baby ...., was located when about three weeks old, and was not thriving at all, although being fed exclusively on mother's milk. The mother was not strong, and her milk lacked nourishment. Our nurse advised her to supplement the baby's food by three feedings a day of cow's milk, modified according to our formula, which was done; at the same time instructing the mother regarding her own diet and care of her general health. She soon improved to such an extent that when last seen, it was only necessary to supplement the baby's food by one feeding of cow's milk each day. The baby at that time weighed 20 pounds, and was strong and well. Since their change of residence to another city, we have heard from this mother on several occasions, expressing her gratitude for what help we were able to render her, and remarking on the baby's steady improvement.

Below is my tabulated report:

Babies brought over from 1913	986	
New babies under supervision during 1914	1,581	
Babies in annexed territory under supervision	34	
Total number of babies under supervision		2,601
Expectant mothers under supervision		314
Visits for prevention of infant mortality		13,736
Visits to expectant mothers		899
Fatal cases of infantile diarrhea investigated		97
*"Special" visits paid		1,120
Number of mothers to whom practical instruction was given		87
Birth certificates investigated		107
Number of babies furnished with supplies. Barley flour		101
Bottles		51
Hours spent in work for the prevention of infant mortality		7,066
Deaths from diarrhea and enteritis among babies brought over from 1913	8	
Deaths from diarrhea and enteritis among new babies under supervision during 1914	22	
Total number deaths from diarrhea and enteritis among supervised babies		30
Deaths from all causes among babies brought over from 1913	50	
Deaths from all causes among new babies under supervision during 1914	92	
Total number deaths among supervised babies		142

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*Special work includes visits made by request of physicians, mothers, caretakers and others to see babies outside of our regular line of work.

Before bringing this part of my report to a close I wish to call your attention to the general improvement in the management of maternity and foundling hospitals under the inspection of the Board of Health and the State Board of Charities and Corrections, there being a decided decrease in the number of deaths, as may be noted from my tabular report handed you herewith for your inspection.

The amount of office work should not go unmentioned, as with the increased number of babies under our supervision during the year which has just closed, the office work has materially increased, and has almost doubled that of any previous year.

In conclusion, we wish to acknowledge our obligations to the Salvation Army, through Adjt. Johnson, by whose co-operation and material aid, we have been enabled to supply milk to a number of babies, and other necessities in the homes in which we visit, and in this way have improved the conditions of many of them.

PART 2.

TUBERCULOSIS.

Duing the year 1914 our main efforts were directed, as heretofore, towards the instruction and education of dispensary patients, and all other suitable cases of tuberculosis and suspected tuberculosis, coming under our observation and supervision. In our daily rounds we located a number of suspected tuberculosis cases, most of whom were persuaded to go to the Health Department Tuberculosis Dispensaries for diagnosis and treatment.

There was a steady increase in the amount of work and good accomplished at both the white and colored tuberculosis dispensaries, and though it is difficult, with such a problem as the prevention of the spread of tuberculosis, to show to outsiders just what good has been accomplished, yet to those who are in daily touch with the details of the work and records of same, though progress seems slow, we find that it is only in looking back over the year's work, that one is able to note its efficiency.

The value of the nurse to the community may be demonstrated by the following instance:

A suspected case of tuberculosis was located by one of our nurses in a very poor section of the city, in a house where several other persons were living. He was advised by the nurse to go to the Health Department Tuberculosis Dispensary for diagnosis; he did so, and was there pronounced a positive case. This patient was then given the proper treatment and instruction regarding his own welfare and the safety of others with whom he might come in contact. This case was immediately followed up by our nurse, through whose untiring and persistent efforts a room was fitted up for him, where he slept alone, with all windows kept open day and night. It was not long before he became a model tuberculosis patient in every respect, using sputum cups, and willing to follow all advice given him.

It is only with the adoption of preventive measures, as above cited, that we may expect to lower the percentage of tuberculosis cases.

The appended table gives a summary of the tuberculosis work done by the Department nurses throughout the year ending December 31, 1914:

Number of visits to dispensary patients, white	395	
Number of visits to dispensary patients, colored	481	
Number of visits made to dispensary patients which were not recorded at dispensaries	691	
Total number of visits to dispensary patients		1,567
Number of visits to non-dispensary patients		1,855
Total number of visits to tuberculosis cases		3,422
Number of suspected tuberculosis cases located by nurses		72
Number of patients to whom supplies were carried by nurses		268
Number of patients sent to Pine Camp		52
Number of dispensary service hours given by nurses	1,051	
Number of hours visiting tuberculosis cases in their homes	1,233	
Total number of hours given by nurses to the work for prevention of tuberculosis		2,284

For further information I refer you to the reports of chiefs of clinics of the Health Department Tuberculosis Dispensaries.

In concluding this report I wish to say that during the past year the resources of the nursing staff have been taxed to the utmost to meet the ever increasing demands upon them, and the record of the year's work for the prevention of the spread of tuberculosis has demonstrated the necessity of more nurses being placed in this particular field, in the very near future. As before stated, the work at the dispensaries has gradually increased, owing to the steady influx of patients through the clinics; new cases coming for diagnosis, and old ones returning for treatment. And others showing but slight signs of infection, yet because of their environment and exposure to infection, need constant supervision to prevent their developing into tuberculosis. The non-dispensary tuberculosis patients coming under our supervision, also require almost undivided attention on our part, if we can expect to diminish the spread of this disease.

Respectfully submitted,

MARY JULIA MOORE, R. N.,
Chief Nurse.

REPORT OF INSPECTOR OF MILK AND FOOD SUPPLIES.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to submit herewith my report as Inspector of Milk and Food Supplies for the year ending December 31, 1914.

Visits for the year 1914			12,619
	No. Places Inspected	Visits	
Grocery stores	796	5,776	
Bakeries	21	268	
Dairies	2	440	
Markets	2	340	
Depots	6	60	
Cold storage plants	4	50	
Ice cream plants	41	346	
Commission houses	42	1,630	
Fish auctions	4	440	
Confectioneries	241	1,446	
Abattoirs	8	24	
Hotels	8	16	
Cook shops	52	156	
Restaurants	48	144	
Drug stores (soft drinks)	33	99	
Fish houses	29	590	
Butcher shops	10	360	
Groceries (wholesale)	15	60	
Pie plants	1	20	
Pickle factories	4	12	
Candy factories	4	16	
Cake and cracker factory	2	8	
Express depots	2	16	
Ice plants	10	20	
Private delivery of milk	9	270	
Tea and coffee stores	6	12	
	1,399	12,619	12,619

FOOD PERMITS.

Permits granted	268
Permits revoked	5
Permits restored	5
Permits suspended	2

Permits restored		2
Cases to court		12
Cases dismissed		5
Fines imposed	$	45 00

MILK.

Gallons of milk to churn		30,805
Below standard	26,075	
High temperature	4,730	
		30,805
Gallons of milk condemned		4,706
Samples to Chemist		3,403
Samples to Bacteriologist		1,761
Cans condemned		3

FOOD PRODUCTS CONDEMNED.

	Lbs.	Value.
Game	5,593	$ 743 95
Vegetables	85,325	2,265 25
Fruit	54,230	1,173 00
Poultry	189	30 83
Meats	1,407	187 90
Fish	20,658	472 40
Confectioneries	480	76 00
Butter	75	15 00
Melons	9,260	203 70
Groceries	1,250	59 00
	178,467	
Oysters (gallons)	56	29 00
Eggs (dozens)	505	85 46
		$ 5,341 49

Increase in 1914 Over 1913.

Visits		3,140
Samples of milk to Chemist		831
Number of business places		99
Food product condemned (pounds)		15,717
Value of food product condemned	$	953 62
Permits granted		47

Visits to hotels, restaurants, cook shops, and drug stores were made only on account of screening.

The annexed section to the city is such that it will require a great deal of time to inspect. About sixty per cent. of the business places are in satisfactory condition, but there are a number of places not suited for business on account of their location and construction.

It will not be possible to maintain close inspection with the present force. I would recommend two more assistants in the Food Department. The business places in the annexed territory are so scattered that it will require from one to three days to inspect them. A comparison of the work of 1914 with that of 1913 is evidence of the increased work of this branch of the Health Department.

I am of the opinion that there should be inspection of all raw or cooked foods in public places. Also all cows within the city should be listed with the Department, so as to enable the Inspector to inspect where they are stalled and report to the Chief Health Officer.

I would call your attention to all slaughtered meats, whether slaughtered locally or shipped by farmers.

There was but little cold storage poultry or game sold or offered for sale, due to rigid enforcement of the law governing the storage of food products.

There was but a small per cent. of game or poultry to condemn, and that condemned consisted of rabbits which, due to methods of packing, had spoiled.

General conditions as to food products show a marked improvement.

Respectfully submitted,

E. M. NOBLE,
Food Inspector.

REPORT OF DAIRY INSPECTOR.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to present to you my report as Dairy Inspector for the year ending December 31, 1914.

Number of visits to dairy farm	1,672
Number of dairies visited and scored	170
Number of scores made	1,340

CLASS	Jan:	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
0 to 80	17	16	20	21	21	21	21	22	25	16	18	14
70 to 90	93	82	89	97	96	80	99	87	86	86	80	95
80 to 100	4	3	4	6	4	1	2	1	3	3	4	3
9												
Total number of scores made during month	114	101	113	124	121	102	122	110	114	105	102	112
Number of dairies scored which contined to sell milk and cream during month	114	98	115	125	121	101	122	108	114	105	102	112
Average score	82.9	82.9	82.8	83.8	82.5	82.1	82.3	82.4	82.4	82.7	82.8	83.3

Permits refused		5
Permits suspended		2
Permits suspended and restored		2
Permits revoked		5
Permits revoked and restored		5
Average score of places whose permits were revoked		76.2
Average score of places whose permits were revoked and restored		83.8
Diseased cows found and use of milk from same ordered discontinued (2 giving stringy milk, 2 injured udder, 5 with garget, 6 inflamed bags, 10 with cowpox)		25
Gallons of milk condemned		4,391
Gallons of milk ordered to the churn		30,714
High temperature	4,639	
Below standard	26,075	
Samples of milk taken for bacteriological examination		1,742
New barns built during year		9
New milk houses built during year		9
Sets of blue prints for barn construction furnished during year		74
New barns under construction		12
New milk houses under construction		12
Number of new shippers to the Richmond market during the past year		12
Number of shippers that have discontinued shipping to Richmond during the past year		18

While dairying is no "get-rich-quick" business, there is no branch of farming equal to it if a man will breed up a good herd of cattle and make cheap feed; for in addition to producing an excellent income the keeping of cows also increases the fertility of the farm on which they are kept.

The milk and cream supply for the City of Richmond is at present produced in 18 counties, viz.: Albemarle, Amelia, Buckingham, Caroline, Cumberland, Chesterfield, Goochland, Henrico, Hanover, King William, Louisa, Nottoway, New Kent, Orange, Powhatan, Prince Edward, Stafford and Spotsylvania.

A large per cent. of the fresh milk supply is produced within a short distance of Richmond, the shippers located at a great distance from the city shipping mostly cream. There is no reason, however, with the use of refrigerator cars for shipping, why the milk supply for the City of Richmond cannot be obtained from farms located at a greater distance from the city. On cheaper lands, and with the opportunities for having more land for raising crops and young stock, the dairy farmer can produce milk at so much less per gallon. Also being located a greater distance from the city is a big factor in the solution of the labor problem.

The control of the milk supply after it reaches the city is not such a large problem, as nearly all the milk is handled by the two city milk plants, there being at present only ten retailers. The two city plants have installed pasteurizers with the Holder system, having self-recording thermometers, and are at present pasteurizing the entire product handled by them.

If the majority of people could be made to realize the food value and cheapness of milk, there would be a much larger quantity of it consumed. With the exception of corn, wheat, beans and potatoes, there is perhaps no other food which enters largely into our diet that can be purchased as cheaply, when nutritive value is considered, as milk and milk products.

There was a surplus of milk on the Richmond market during most of the year, with the exception of a few months in the fall, when, owing to a decrease in the production, the supply just about equalled the demand. The distributing plants located in the city have been able to handle the surplus of milk to advantage, owing to the increased demands of the ice cream manufactures, the development of this business being most remarkable during the past ten years. Large plants can now be found in almost all large cities devoted exclusively to the manufacturing of ice cream, Richmond having one of the most modern, up-to-date ice cream plants in the country, the product from which is being shipped into several States.

Dairymen as a class seem to be very much dissatisfied with their calling, the majority of them claiming that there is no money in the business. I am thoroughly convinced that the trouble is not so much with the business as with the men engaged in it. Some are not adapted to the dairy business. There are failures in every line of business, but it is nonsense for men to declare that there is no money in dairying, as one has only to look among the shippers to the Richmond market to find a number of dairymen who not only have made a good living but something besides. Some men cannot make money at dairying, but, on the other hand, you will find as many successes in this business as in any other. Success does not come in dairying without constant attention to every detail of the business. A dairyman should know what every cow in his herd is capable of doing, and to obtain this information it is necessary to:

Weigh the milk from each cow and keep a record of same.
Test the milk for butter fat from each cow.
Keep a record of the feed fed to each cow.

It is unfortunate that so few dairymen will take enough interest in their business to find what the individual cows in their herds are capable of doing, and to know what it is costing to produce a gallon of milk. Wherever records have been kept it has always been found that it costs more to feed a cow giving 8,000 pounds per year of milk than one giving 6,000 pounds yearly, but the increased cost of feed is not in proportion to the increased value of the milk produced.

Three great factors in obtaining results in the dairy business are

CARE, FEEDING, BREEDING.

Care. By proper care cattle can be kept healthy and comfortable.

Feeding. Proper feeding can induce the animal to produce all she is capable of producing.

Breeding. By selecting and testing and the use of a pure-bred sire, great improvement can be made in the producing capacity of the herd. There should be a pure-bred sire from a known milk-producing family at the head of every herd; then by careful selection of heifer calves from the best cows a greatly improved herd can be built up.

Variations in the tests of cream made by the producer and the party to whom he is selling his cream are often the cause of a great deal of trouble. The dairyman is likely to think that, when milk is from the same herd and there is no change in the feeding, milking or separating, the percentage of fat in cream should not vary.

Milk when drawn from the cow has a temperature of about 92 degrees to 95 degrees Fahrenheit, and this is the best temperature for separating.

The effect of the speed of the separator is one of the great causes of variation—the higher the speed, the greater the centrifugal force and the more skimmed milk will leave the bowl with the result that the quantity of cream is lessened and the test raised. On the other hand, a falling off in speed allows more skimmed milk to enter the cream.

There are a great many other factors entering into the variations in the test of cream, such as the richness of the milk separated, the rate of flow of milk into the separator bowl, and the amount of water or skimmed milk used in flushing out the bowl. It is very important to see that when cows are milked they are properly stripped, the strippings being the richest part of the milk; for if we leave the richest part of the milk in the udder a drop in the cream test must be expected.

To get the proper test of cream great care must be taken in getting the sample to be tested. Also, in doing the testing, skill and experience are required to secure accurate results.

The 18 c.c. cream pipette has been discarded as an accurate measure for making cream determinations, being replaced by the cream scales, as the wide range in the specific gravity of cream showed the unreliability of the use of the pipette. Errors approximately as great as those obtained through the use of the cream pipette may be obtained by using inaccurate cream test scales. There is also a chance of the test bottles being inaccurate, so it is not only necessary to have an accurate sample to test, but also proper scales and test bottles.

Several dairymen have had a number of cows in their herds abort during the past year. Where a number of cows lose their calves without any known reason, the trouble will be found to be contagious abortion. The introduction of this disease into the herd is one of the most difficult to guard againt, since new cows are being constantly added to the herd. This disease is considered by many to be more serious than tuberculosis, because so little is known about it and as no specific remedy or preventive has been found for it. The safest plan is to raise your own cows, but as this is not always practicable every effort should be made when cows are purchased to inquire into the history of the herd from which the cows are bought; find out when the cow last calved, also if she has a living calf born during the past year.

It seems that it is about time some means of protecting purchasers of cattle which are supposed to be free from tuberculosis be devised. There is something wrong somewhere when a cow given a clean bill of health will within 90 days after the issuing of this clean bill of health prove to be tuberculous. The practice of selling tuberculous cows on fake tests is costing our dairymen large amounts of money, and it seems that the time has now arrived for State veterinarians of the different States where the fake testing is going on to expose and prosecute these dishonest dealers. Great care should be taken when purchasing new cows to not only have these cows tested by a reliable veterinarian, but also to find out something concerning the history of the herd. It is generally a dangerous practice to buy cows from herds in which tuberculosis is present even though the cows purchased pass the test.

As a number of herds of cattle are being tested for tuberculosis, where reactors are found, after removing these tubercular cattle from the herds, it is very necessary to thoroughly clean and disinfect the barn and surrounding premises. With a little care, this can be done very effectively by following these simple directions:

The surface of the ceiling, walls and floor of the barn should receive a thorough cleansing, all cobwebs being brushed down, and, where there is any accumulation of filth, the same removed by scraping. The stable yard must also receive a good cleaning, and several inches of the earth or surface soil of the stable yard be removed to some place inaccessible to the live stock on the farm. Where surface soil is removed, it can be replaced with soil from some part of the farm that has not been visited by live stock. After cleansing, the disinfectant should be applied. A five per cent. solution of carbolic acid is one of the best and safest disinfectants to use. The entire inside of the stable should be saturated with the disinfectant, special attention being given to the gutters and feeding troughs.

Considerable silage is spoiled every year by turning moldy. This mold is caused by failure to properly pack the silage when the silo is being filled. It is very necessary to have several men in the silo when the silage is being cut and blown into the silo to tramp it down. This tramping should be even over the whole surface. This packing will exclude the air which remains between the particles if it is not done and causes the silage to decompose.

There are two very important factors which largely control the production of milk by a dairy cow; they are feeding and breeding. Taking it for granted that a cow has been properly bred for production, we now have the other great factor of proper feeding. A cow must have a certain amount of feed (about sixty per cent. of her daily ration) to rebuild waste tissues and keep up body heat. A study of the wants of the individual cow is necessary to know when the animal is being fed an economical ration. Some cows, if fed all they will eat, use part of the feed for the forming of excess body fat. A cow of this kind must be limited in her ration to the amount of feed she will use for the production of milk.

As there can be no dairying without cows, and no cows without raising calves, it is necessary, if our dairymen want good healthy cows, to discontinue the practice of selling their heifer calves to the butcher and raise the same. The increasing demand for dairy products makes it necessary for even a larger number of heifers to be raised in the future than has ever been raised before. On account of the high market value of whole milk, dairymen producing whole milk for the market do not like to raise calves because of the necessity of feeding them whole milk for at least the first four weeks of their existence, but, when we take into consideration the high cost of dairy cows, it looks like a good business proposition to raise heifer calves even at a cost of $55.00 to $65.00, which is about the present cost of raising them until they are two years of age.

The results of investigation by this Department show the importance of covering milk cans during hot weather. The Department cannot too strongly recommend the use of wet blankets or jackets to cover the cans during transportation, the results obtained showing conclusively that where cans were covered the temperature of the milk was much lower on its arrival at the milk stations than when they were shipped by railroad or carried in wagons without being protected in any way.

The work of dairy inspection has been rendered more efficient by the better means of transportation; with the automobile now in use for the inspection of dairy farms, it is possible not only to visit a greater number of places, but also to spend more time in the office, which is necessary owing to the large number of callers desiring information on matters pertaining to dairying. Year by year the work of dairy sanitation as carried on by the Richmond Health Department becomes more constructive and more educational as the real problems become better known. Although only nine new barns were built during the past year and twelve are now under construction, this Department furnished seventy-four sets of blue prints showing detailed construction and measurements of modern, up-to-date dairy barns free of charge to persons applying for same. The Richmond Health Department endeavors to obtain results by its educational work, which is being appreciated more as the work is becoming better known.

The tuberculin testing of cows, if from no other than the economic standpoint, is very important and necessary to work out if we expect to have a continuance of the milk supply for years to come.

The Richmond Health Department is doing everything possible with its present force to improve the milk supply of the city, but it is only with the co-operation of the producer and the milk dealer in the city that results can be obtained.

Respectfully submitted,

T. J. STRAUCH,
Dairy Inspector.

REPORT OF CITY CHEMIST.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

Below will be found a list of the samples examined for the Health Department during the year 1914 and a statement of the results of the examination of these samples.

SAMPLES EXAMINED	City's Samples	At Citizen's Request
Butter		1
Cream	1	3
Ice Cream	3	
Milk	3,386	117
Well water		1
Total	3,390	122
Grand total	3,512	

Table Showing Number of Samples of Milk Collected by City Inspectors, Marked Morning and Evening, and the Number and Per Cent. of Samples Below Standard for Each Month.

				BELOW STANDARD	
	A. M.	P. M.	Total	Number	Per Cent.
January	221	50	271	36	13.28
February	256	19	275	96	34.91
March	244	51	295	85	28.81
April	265	47	312	95	30.44
May	269	42	311	118	37.97
June	251	71	322	135	41.92
July	294	30	324	121	38.17
August	224	77	301	77	24.85
September	176	140	316	81	25.63
October	170	70	240	37	17.87
November	144	24	168	31	18.67
December	165	128	293	33	11.26

Average of Analyses of City's Milk Samples by Months

	ALL SAMPLES			BELOW STANDARD SAMPLES		
	Fats	Solids not fat	Total solids	Fats	Solids not fat	Total solids
January	3.76	9.02	12.78	3.46	8.52	11.98
February	3.40	8.98	12.38	3.11	8.75	11.86
March	3.62	8.94	12.56	3.42	8.60	12.02
April	3.65	8.98	12.63	3.20	9.05	12.25
May	3.44	8.68	12.12	3.08	8.84	11.92
June	3.49	8.83	12.32	3.29	8.48	11.77
July	3.49	8.88	12.37	3.25	8.49	11.74
August	3.59	8.76	12.35	3.25	8.61	11.86
September	3.80	8.84	12.64	3.62	8.33	11.95
October	3.75	8.88	12.63	3.64	8.03	11.67
November	3.65	8.99	12.64	3.32	9.05	12.37
December	3.74	9.09	12.83	3.35	8.54	11.89
Average for the year.	3.62	8.90	12.52	3.33	8.60	11.93

Of the 3,386 samples collected by the City Inspectors, 945 were below standard—27.93 per cent.

JAMES M. WHITFIELD,
City Chemist.

REPORT OF PLUMBING INSPECTOR.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor to present to you my annual report as Inspector of Plumbing for the year ending December 31, 1914.

While during the year just closed there were not as great a number of plumbing inspections made as in the year previous, yet it was a fairly good year in building operations, considering the uncertainty that existed in the financial condition of the country on account of the European war. However, plumbing inspections and tests were made in 564 new buildings, against 678 during 1913. This included some very large structures, that necessitated, according to the character of the work, numerous inspections. During the year 2,286 inspections were made to plumbing additions and alterations in old plumbing systems. A great deal of this work was ordered by this Department where insanitary conditions existed, and the improvements were made to protect the health of the community.

Late in the past year the City of Richmond annexed a large amount of new territory, much of which, in consequence of being very thickly populated, naturally brings under my jurisdiction in widely separated districts a large amount of work, but I trust that I may be provided with the necessary assistance to fully carry out the plumbing ordinances, so as to give the work proper attention.

While there is a large portion of this territory without sewer facilities, yet in many sections sanitary arrangements with sewerage have already been installed, but a great deal of this work has been done in a very unsatisfactory manner on account of not having any ordinance regulations governing the same. I have already found many instances in which extensive alterations will be required to improve the sanitary conditions so that they will conform to plumbing ordinances. The sewers in many instances in these sections were installed and owned by private corporations, and some of them are entirely inadequate to meet the demands of an increasing population, but the problems of proper sewerage and drainage for this new territory are now being considered and worked out by the proper authorities, and I trust in the near future that the sanitary conditions where so badly needed will be greatly improved.

I would suggest, as I have done in some of my previous reports, that some consideration be given to the erection of public comfort stations in our city, as many cities in the country much smaller than Richmond have already had such stations installed during the past year, and a progressive city with the population of Richmond should provide these public conveniences. I trust, therefore, that during the present year action may be taken in the matter and these improvements will be made, so as to add to the comfort and health of our city.

I desire to call your attention to the numerous complaints both from stores and dwelling houses that have been subdivided and rented out by owners, where the tenants complain of not having the necessary toilet accommodations. In some instances only one water closet is used for the entire building, and in such cases when additional closets are ordered by this Department, and it becomes a legal question, it is claimed by the owners that it is only one building and that they cannot be forced to put in separate closets. I hope, therefore, that some amendment will be made to our present health ordinances that will fully cover these conditions, as I think this is a matter of the greatest importance.

During the present year, to keep in line with the vast improvements made in the construction of the modern office and other tall buildings, there should be some amendments made to our plumbing ordinances, so as to give the very best results and to cover more fully all conditions that experience has shown are liable to occur in all large plumbing systems.

In connection with this report, I desire to express my high appreciation of the very valuable assistance rendered me at all times by Mr. Thomas Mitchell, who very actively assisted me in making inspections while in discharge of his duties as sanitary officer, especially at times when conditions and circumstances were such that it would have been impossible for me to meet the demands for inspections without his services.

I must say also that I appreciate the assistance rendered by the Chief Sanitary Officer, Mr. Tuck, in his promptness in always co-operating with me in the abatement of nuisances whenever occasion required it.

My tabular report follows.

MONTH	Inspections Made	Plumbers' Permits Issued	New Buildings Inspected	Additions and Alterations Inspected	Complaints Investigated	Notices Served on Owners and Agents	Police Court Cases Tried
January	248	265	25	193	30	30	2
February	263	145	27	207	29	29	1
March	227	177	31	169	27	27	....
April	317	172	61	221	35	35	1
May	302	184	72	195	35	35	2
June	264	175	59	173	32	32	2
July	258	143	69	157	32	32	....
August	210	157	47	139	24	24	....
September	255	185	91	142	22	22	1
October	293	192	41	224	28	28	....
November	234	107	18	183	33	33	....
December	340	77	33	283	24	24	1
Total	3,211	1,979	564	2,286	351	351	10

Fines imposed, $60.00.

Respectfully submitted,

T. M. LANDERS,

Inspector of Plumbing.

REPORT OF PLUMBERS' EXAMINING BOARD.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to submit herewith my report as Secretary of the Plumbers' Examining Board, for the year ending December 31, 1914.

Meetings held during the year	11
Journeymen plumbers examined	29
Number examined and found unqualified	6
Number examined and licensed	23
Number of licenses renewed	116

Respectfully submitted,

THOS. M. LANDERS,
Secretary of the Plumbers' Examining Board.

FUMIGATOR'S REPORT.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor to submit to you my report for the year ending December 31, 1914.

MONTH	SCARLET FEVER		TYPHOID FEVER		DIPHTHERIA		TUBERCULOSIS		OTHER CAUSES		TOTAL	
	Houses	Rooms	Houses	Rooms	Houses	Rooms	Houses	Rooms	Houses	Rooms	Houses	Rooms
January	43	124	5	14	13	38	44	154	20	80	125	410
February	33	108	2	4	9	30	27	116	24	96	95	354
March	33	84	2	4	7	22	36	126	25	106	103	342
April	21	58	2	6	5	28	53	292	16	66	97	450
May	10	30	1	2	0	0	58	282	9	46	78	360
June	6	18	2	8	2	6	79	474	9	86	98	592
July	9	48	7	22	3	8	70	398	4	10	93	486
August	2	4	4	24	8	28	50	382	56	310	120	748
September	4	16	2	4	10	26	70	374	26	178	112	598
October	11	30	2	8	53	172	48	248	11	42	125	500
November	24	88	2	6	61	172	50	220	3	8	140	494
December	22	68	4	20	43	112	48	250	2	4	119	454
Total	218	676	35	122	214	642	633	3,316	205	1,032	1,305	5,788

Respectfully submitted,

JAMES F. WALLER,
Fumigator.

REPORT OF WHITE TUBERCULOSIS DISPENSARY.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor to submit herewith my annual report for the year ending December 31, 1914, of the work done at the White Tuberculosis Dispensary by the staff and nurses of your Department.

During the year 137 patients visited the dispensary, making 809 visits. Of these 63 were old patients and 74 were admitted during the current year. The proportion of males to females was two to three. Nine (9) patients were sent to Pine Camp and 8 were arrested. Those arrested are most grateful. They return at irregular intervals for observation, and any indisposition will bring them to the dispensary, where they feel they have friends and that if sick from some other disease they will be directed to a suitable place for treatment. Most of the patients prove themselves advertisers by referring or bringing others with any symptoms referable to the thorax. Many of these prove nontubercular and are referred to the proper dispensaries for treatment.

The cheerful unselfishness and interest shown by the nurses in ministering to these patients has been effective in training some in hygiene who would otherwise have been negligent.

The anxiety shown by most patients in protecting others from infection makes one conclude that the instruction given will eventually bring results. The cure of tuberculosis cases unless seen very early, especially among the self-supporting class we treat, is not expected, and the arrest of 8 cases does not give a proper value to the results obtained.

The 409 visits stated made by nurses does not give them full credit for the work done, as the visits they make patients who have been dropped from the dispensary report because of non-attendance during any month, even if bed patients, does not go to their credit. Constant missionary work by these nurses in their visits to all homes is to be encouraged, as by this means many patients are first informed of the city's tuberculosis dispensary, and increased attendance will result.

Respectfully submitted,

GILES B. COOK, M. D.,
Chief of Clinic.

Report of Franklin Street (White) Tuberculosis Dispensarg for the Year Ending December 31, 1914.

MONTH	SEX		AGE			STAGE OF TREAT'MT			DIAGNOSIS			SPUTUM REPORT			WEIGHT			NO. OF VISITS		CONDITION					NO LONGER UNDER TREATMENT					
																												Referred		
1914	Male	Female	Under 20 year's	20-40 years	Over 40 years	New patient	Old patient	Discharged	Tubercular	Non-tubercular	Undetermined	Positive	Negative	Not Examined	Increased	Stationary	Diminished	To dispensary	By nurse	Disease arrested	Improved	Unimproved	Progressive	Died	No case	Left city	Lost sight of	To other dispensar's	To private physician	To sanitorium
January	14	27	11	17	13	11	30	....	30	6	5	1	24	16	16	20	5	91	53	....	14	27	....	....	....	....	....	....	....	....
February	18	19	6	21	10	8	29	....	30	1	6	3	21	13	13	19	5	59	49	....	17	19	1	....	....	....	....	....	....	1
March	18	22	11	18	11	8	32	....	32	3	5	3	31	6	7	5	28	74	45	1	7	30	2	....	....	....	....	....	....	3
April	20	20	10	16	14	7	33	....	32	4	4	3	26	11	10	21	9	78	57	....	12	25	2	....	....	....	....	....	....	1
May	17	21	11	17	10	9	29	....	28	6	4	5	18	15	5	28	5	68	38	1	11	24	2	....	....	....	....	....	....	1
June	20	22	9	20	13	8	34	....	33	3	4	8	22	12	1	19	22	74	37	....	5	32	5	....	....	....	....	....	....	....
July	13	24	9	16	12	6	31	....	32	2	2	6	16	15	6	18	13	70	37	....	8	24	4	1	....	....	....	....	....	1
August	8	24	6	19	7	6	26	....	23	4	5	9	13	10	8	15	9	22	25	....	6	24	3	....	....	....	....	....	....	1
September	8	18	9	10	7	1	25	....	22	1	3	3	14	9	14	10	1	57	16	....	14	11	1	....	....	....	....	....	....	....
October	10	15	5	15	5	2	23	....	22	2	1	4	17	4	8	11	6	61	21	....	7	15	3	....	....	....	....	....	....	....
November	9	6	5	13	7	4	21	....	22	2	1	3	15	7	6	12	7	52	20	....	8	14	3	....	....	....	....	....	....	....
December	10	17	5	13	9	4	23	....	24	1	2	4	14	9	9	15	3	63	11	6	9	11	1	....	....	....	....	....	....	1
Total	165	235	97	195	109	74	336	....	331	35	42	52	231	127	103	193	113	809	409	8	112	255	27	1	....	....	....	....	....	9

REPORT OF COLORED TUBERCULOSIS DISPENSARY.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to submit herewith my annual report of the work done at the Colored Tuberculosis Dispensary and by the nurses of the Richmond Health Department for the year ending December 31, 1914.

There were 904 visits to the Dispensary by patients, and 481 visits were made by nurses to patients in their homes. Of the patients attending in 1913, 50 returned in 1914, and 110 new patients presented themselves for treatment, making a total of 160 patients for the year. The greatest number attending in any one month was 54 in June, and the smallest number was 22 in December.

The patients who attended may be classified as follows:

Sex: 57 males, 103 females.

Age: 48 under 20 years; 83, 20 to 40 years; and 29 over 40 years of age.

Diagnosis: 61 tubercular; 21 non-tubercular; 78 undetermined.

Referred: To other dispensaries, 11; to City Hospital or sanatoria, 3.

Of the 61 tubercular patients 28 attended fewer than four times, and hence are not classified below as to condition after treatment. Many of these came only once, as did also many of those whose diagnosis is undetermined.

The condition after treatment of the 33 tubercular patients who attended four or more times was as follows: disease arrested, 1; improved, 12; unimproved, 13; progressive, 5; died, 2.

Other cases might have been reported "arrested" had they not discontinued their visits to the dispensary upon making substantial improvement but before we could safely place them in that class. The number of cases reported improved seems relatively small. Tuberculous subjects are hopeful, and upon slight improvement become careless in attending dispensary, thinking to continue improvement without further assistance, so we frequently lose sight of them as dispensary patients before we are prepared to say that improvement is definitely established. The nurses usually keep track of such cases but their observations are not recorded in this report. Three patients who died attended the dispensary fewer than four times, and are thereforee not included in the above classified list. We invariably drop from the roll at the end of the month all patients who have not visited the dispensary at least once during the month, bed patients and others too ill to attend being excepted. The nurses visits to patients of private physicians and to patients dropped from the roll are not recorded, so the nurses get no credit for such visits, a great many of which are made during the year, the cases no longer being dispensary patients.

We continue to make use of the class method to instruct patients, (1) concerning the things pertaining to their welfare and comfort, so that they may derive the greatest benefit from dispensary treatment, which consists in a great deal more than receiving medicine, sputum cups, and napkins at the dispensary, and (2) the cultivation of such habits upon the street and at home as to tend to offer the greatest amount of protection to their families and friends. Talking to the patients in a body greatly economizes the time of the physician, and offers opportunity to emphasize and repeat the points of instruction already stressed by the visiting nurses when, in their daily rounds, they see the patients in their homes. In this connection we also make constant use of our wall charts, which show at a glance the dates upon which a patient has attended the dispensary during the year, thereby commending those who come regularly, and encouraging to better attendance those who seem indifferent to treatment.

The most potent factor in preventing the spread of tuberculosis is the educational feature of the dispensary for communicable disease, for this dispensary reaches a large, infectious class of individuals who would not otherwise receive such systematic instruction or persistent treatment, either in the care of a private physician or at the general dispensary. We do not measure the beneficent results of the tuberculosis dispensary by the number of cases "cured," for that is relatively small, but we do expect the dispensary to exert a most wholesome influence in reducing, by prevention, the number of tuberculosis cases in the community, for the patients who come regularly under the influence and the dispensary physician and the visiting nurses cannot fail to become less a menace to the community as a result of the opportunities enjoyed.

The appended table of summaries gives a detailed account of the dispensary work month by month.

Respectfully submitted,

P. D. LIPSCOMB, M. D.,
Chief of Clinic.

Report of Third Street Tuberculosis Dispensary for the Year Ending December 31, 1914

MONTH	SEX		AGE			STAGE OF TREATM'T			DIAGNOSIS			SPUTUM REPORT			WEIGHT			NO. OF VISITS		CONDITION				NO LONGER UNDER TREATMENT						
																												Referred		
1914	Male	Female	Under 20 years	20–40 years	Over 40 years	New patient	Old patient	Discharged	Tubercular	Non-tubercular	Undetermined	Positive	Negative	Not examined	Increased	Stationary	Diminished	To dispensary	By nurse	Disease arrested	Improved	Unimproved	Progressive	Died	No case	Left city	Lost sight of	To other dispensar's	To private physician	To sanitorium
January	11	20	9	15	7	10	21	1	13	2	16	7	13	11	6	20	3	49	39	0	12	14	5	0	1	0	0	1	0	0
February	11	20	9	14	8	6	25	0	15	2	14	6	12	13	8	6	4	53	38	0	7	19	4	1	0	0	0	1	0	0
March	14	25	16	16	7	4	35	6	18	7	14	6	31	2	16	11	10	83	56	0	21	15	3	0	0	0	0	0	0	0
April	11	19	14	10	6	4	26	0	14	4	12	7	19	4	4	17	5	67	87	0	15	11	3	1	0	0	0	0	0	0
May	16	33	17	23	9	17	32	4	23	9	17	7	29	13	4	20	11	100	61	0	12	33	4	0	4	0	0	0	0	0
June	22	32	20	26	8	18	36	5	26	8	20	10	27	17	6	20	13	101	64	1	22	29	2	0	2	0	0	1	0	0
July	20	31	14	27	10	17	24	8	32	10	9	13	23	15	6	30	13	108	52	0	21	25	4	1	8	1	0	4	0	0
August	20	15	11	17	7	10	25	3	22	4	9	12	15	8	7	15	11	77	33	0	13	20	2	0	3	0	0	3	0	0
September	17	15	11	14	7	7	25	0	21	1	10	12	14	6	12	13	6	66	33	0	15	16	1	0	0	0	0	0	0	0
October	20	24	14	23	7	10	34	2	26	1	17	14	24	16	16	18	8	86	38	0	17	26	1	1	1	0	0	0	0	2
November	16	21	7	21	9	5	32	1	25	1	11	14	21	2	14	10	12	65	16	0	13	21	2	1	1	0	0	1	0	1
December	11	11	6	10	6	2	20	0	16	0	6	9	12	1	9	8	3	49	14	0	10	10	2	0	0	0	0	0	0	0
Total	....	....	....	....	....	110	....	....	....	....	....	....	....	....	....	....	....	904	481	1	....	....	....	5	20	1	0	11	0	3

REPORT OF DISTRICT PHYSICIAN, FIRST DISTRICT.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor to submit to you my report as District Physician of the First District for the year ending December 31, 1914.

Number of visits, white	283	
Number of visits, colored	1,128	
Total number of visits		1,411
Number of white patients	130	
Number of colored patients	514	
Total number of patients		644
Number of patients, male	197	
Number of patients, female	447	
Total number of patients		644
Number of deaths, white	0	
Number of deaths, colored	7	
Total number of deaths		7
Number of patients sent to the City Home	40	
On hand December 31, 1914	6	

Respectfully submitted,

J. G. TRANT, M. D.,
District Physician.

REPORT OF DISTRICT PHYSICIAN, SECOND DISTRICT.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor to submit to you my report as District Physician of the Second District for the year ending December 31, 1914.

Number of visits, white	1,089	
Number of visits, colored	757	
Total number of visits		1,846
Number of white patients	461	
Number of colored patients	292	
Total number of patients		753
Number of patients, male	252	
Number of patients, female	501	
Total number of patients		753
Number of deaths, white	4	
Number of deaths, colored	7	
Total number of deaths		11
Number of patients sent to the City Home	77	
On hand December 31, 1914	13	

Respectfully submitted,

J. H. CROUCH, M. D.,
District Physician.

REPORT OF DISTRICT PHYSICIAN, THIRD DISTRICT.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to submit to you my report as District Physician of the Third District for the year ending December 31, 1914.

Number of visits, white	753	
Number of visits, colored	1,446	
Total number of visits		2,199
Number of white patients	284	
Number of colored patients	528	
Total number of patients		812
Number of patients, male	283	
Number of patients, female	529	
Total number of patients		812
Number of deaths, white	0	
Number of deaths, colored	3	
Total number of deaths		3
Number of patients sent to the City Home	100	
On hand December 31, 1914	20	

Respectfully submitted,

J. F. CRANE,
District Physician.

REPORT OF DISTRICT PHYSICIAN, FOURTH DISTRICT.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to submit to you my report as District Physician of the Fourth District for the five months from August 1st to December 31, 1914.

Number of visits, white	11	
Number of visits, colored	128	
Total number of visits		139
Number of white patients	10	
Number of colored patients	69	
Total number of patients		79
Number of patients, male	30	
Number of patients, female	49	
Total number of patients		79
Number of deaths, white	0	
Number of deaths, colored	2	
Total number of deaths		2
Number of patients sent to the City Home	19	
On hand December 31, 1914	1	

Respectfully submitted,
EDWARD McCARTHY, M. D.,
District Physician.

REPORT OF DISTRICT PHYSICIAN, FIFTH DISTRICT.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to submit to you my report as District Physician of the Fifth District for the year ending December 31, 1914.

Number of visits. white	383	
Number of visits, colored	3,038	
Total number of visits		3,421
Number of white patients	249	
Number of colored patients	2,259	
Total number of patients		2,508
Number of patients. male	896	
Number of patients, female	1,612	
Total number of patients		2,508
Number of deaths, white	1	
Number of deaths, colored	15	
Total number of deaths		16
Number of patients sent to the City Home	71	
On hand December 31, 1914	15	

Respectfully submitted,

L. D. BATKINS,
District Physician.

REPORT OF DISTRICT PHYSICIAN, SIXTH DISTRICT.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to submit to you my report as District Physician of the Sixth District for the year ending December 31, 1914.

Number of visits. white	1,856	
Number of visits, colored	255	
Total number of visits		2,111
Number of white patients	818	
Number of colored patients	135	
Total number of patients		953
Number of patients, male	256	
Number of patients, female	697	
Total number of patients		953
Number of deaths. white	4	
Number of deaths, colored	2	
Total number of deaths		6
Number of patients sent to the City Home	54	
On hand December 31, 1914	7	

Respectfully submitted,

JULIAN W. SLOAN,
District Physician.

REPORT OF DISTRICT PHYSICIAN, SEVENTH DISTRICT.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor to submit to you my report as District Physician of the Seventh District for the year ending December 31, 1914.

Number of visits, white	1,754	
Number of visits, colored	592	
Total number of visits		2.346
Number of white patients	775	
Number of colored patients	337	
Total number of patients		1,112
Number of patients, male	334	
Number of patients, female	778	
Total number of patients		1,112
Number of deaths, white	3	
Number of deaths colored	1	
Total number of deaths		4
Number of patients sent to the City Home	32	
On hand December 31, 1914	9	

Respectfully submitted,

E. T. RUCKER,
District Physician.

REPORT OF THE CHIEF SANITARY OFFICER.

DR. E. C. LEVY,
Chief Health Officer, Richmond, Va.

SIR:

I have the honor herewith to submit my report as Chief Sanitary Officer for the year ending December 31, 1914. This report embraces the reports of the five Sanitary Officers and also the work done by Mr. Felix Alfaro and Mr. T. O. Summers, who were employed during the summer months to assist me in stable work. This report also incorporates the reports of the four inspectors who were put on for the purpose of enabling the Department to make a survey of the recently annexed territory.

I regret to say that owing to the sickness of Mr. T. O. Summers, which occurred after he had been with us only a month, the special work to which he was assigned in gathering additional information in regard to methods of fighting flies could not be carried out during the summer of 1914.

The work of Mr. Alfaro was in every way satisfactory.

In connection with the work on stables and the lessening of flies, our sanitary officers accomplished more than I really expected, and it has been demonstrated beyond a shadow of a doubt that the sanitary control of stables will certainly lessen the number of houseflies. Many stable owners who heretofore had insisted that the number of flies could not be lessened no matter what was done to improve their stables did admit before the expiration of the summer that there was a noticeable decrease in the number of these insects.

In the beginning of the summer there was very little complaint on the part of the horse owner in regard to the removal of manure within the time specified by our stable rules and regulations, as farmers were coming to our markets frequently, and through this medium they were able to dispose of this material. However, later on, in the warm months, the farmer came to town when it suited his convenience, and therefore the manure in many instances was allowed to accumulate because there was no one to carry it to the country and no place in or around the city in which this manure could be deposited temporarily. It can be readily understood, of course, that those who have only one horse do not have enough manure in four days to make a load, and they complain bitterly that they are haled to court and fined because of failure to comply with a requirement which is almost an impossibility. I quite agree that in order to have a perfect system of removing manure it must be in the hands of the city, or through private parties who will contract for the removal of manure from every stable in the City of Richmond. The giving out of this contract should be under the control of the Richmond Health Department. While it appears that no city that I know of has adopted this plan, I see no reason why Richmond should not undertake it. I believe that it could be done without any cost whatsoever to the city. Manure is a valuable fertilizer and is always in great demand by our farmers, who are often unable to get it, and instead of allowing small quantities of manure to accumulate, it could be taken to a repository and then shipped to various parts of the State before the eggs of the fly could go on through their development and later hatch out into flies.

The work of having all the dry closets in the City of Richmond conform to the rules of the Health Department was done before the warm weather. Of course, wherever possible by means of sewer connections these dry closets were abolished and sewer and water installed. The Administrative Board has co-operated in a gratifying manner in installing sewers where we have requested them. Sewers now under construction in the northeastern part of the city and the northern end of the city, known as Howard's Grove, will reach at least 450 houses which are now dependent upon dry closets. But for the recent annexation the old city would have been before the summer of 1915 comparatively free of dry closets.

Five of our sanitary officers were directed to make a survey of the annexed territory and ascertain the owners of property on which dry closets were found and which of this property could be connected to sewers, so that when it was desired by the Board of Health to abate these nuisances the information would be in this office. The sanitary officers were likewise directed to make mention of any conditions which they found and thought were inimical to health. Many of the conditions which they found were exceedingly bad, and later on in this report will be found some suggestions which I trust you will consider.

There were at least 2,500 dry closets in this new territory, none of which conformed to the rules of the Richmond Health Department governing the maintenance of dry closets. In many instances conditions were found to be deplorably bad. There were at least 100 houses in and around Barton Heights which have dry closets, although sewer and water connections are in front or otherwise situated so that the property can be connected. That beautiful section on the other side of the river known as Forest Hill Park has no sewers, and the property owners have built cesspools here, there and everywhere, with no regard at all as to how near they are to their own or their neighbors' wells—and these wells are depended on for drinking water. The cesspools are so constructed that they have pipes leading from them that will drain the cesspools through the soil. I have one such place in mind which has pipes from the cesspool discharging the sewage within fifty feet of the well which supplies drinking water to the family. I do not understand how the intelligent people of Forest Hill Park, in these days of enlightenment on sanitary matters, should have adopted such an inexcusable system for disposal of sewage from their property. This part of the new annexed territory is in serious need of sewers, as I am sure typhoid fever will certainly visit those who use the well water from this section unless some immediate change is made to free the ground of this pollution.

The ordinance of this Department asking for six additional sanitary inspectors I trust will be favorably acted upon and this number of inspectors given. The annexed territory is not so thickly built up, but the best portion of it is inaccesible and very dirty. If this number of inspectors is provided for by ordinance, it will enable me to do a great deal of work along sanitary lines that I have heretofore been unable to carry out. It was my purpose when we began house-to-house inspection one year ago to continue this class of work all the time, but I was unable to do so because of the large number of complaints which came in during the summer, which, of course, had to be looked after. I desire to say that, if the additional force asked for is given, I expect to reorganize the system of sanitary inspection by assigning a certain number of men to complaints, a certain number to house-to-house inspection, a certain number to regular stable inspection, and a certain number to regular dry closet inspection. These last two items have been looked after more closely in the last several years than they were formerly, but even the attention which has been paid to dry closets and stables lately has not by any means been as regular as it should have been.

In conclusion, the temporary increase in the sanitary department has given me so much office and special work that I have been unable to make as many inspections personally as I did before their appointment. It appears now that most of my time will be taken up with this kind of work.

The new inspectors are doing good work, and, as usual, the Board made good selections. To the report of each of the old sanitary officers I invite your attention and consideration. They have always shown the desire to *do* what I wanted done, and I am sure there is no department in the city government in which closer harmony and co-operation exists than in this one.

My tabular report follows.

Summons served	176
Cases in court	261
Old closets ordered repaired	1,833
New closets put in	576
Dry closets inspected	3,561
Dry closets ordered cleaned and destroyed	360
Closet boxes ordered in and houses repaired	1,693
Old stench traps repaired	755
New stench traps ordered in	132
Old hydants ordered repaired	721
New dry closets ordered	130
Sewer connections ordered	333
Sewers ordered repaired and cleaned	1,202
Water connections ordered	95
Rain conductors, gutters and roofs ordered repaired	589
Kitchen sinks ordered repaired	459
Visits for Plumbing Inspector	242
Water pipes ordered repaired	774
Yards inspected	10,086
Yards ordered cleaned	5,490
Vacant lots inspected and ordered cleaned	244
Areas inspected—ordered cleaned and drained	78
Cellars ordered cleaned and drained	126

Outhouses inspected and ordered cleaned	315
Dead animals ordered to be removed	326
Alleys inspected	291
Alleys ordered cleaned	286
Old wells inspected—ordered cleaned and repaired	1,594
Old wells condemned and ordered filled	146
Manure piles ordered removed and barrels ordered	1,359
No cause for complaint	276
Contagious disease cards put up	641
Original houses visited	23,813
Premises inspected and revisited	20,675
Agents, Owners and Plumbers visited	5,444
Miscellaneous visits and orders	1,345
City water ordered on premises	1,237
Culture stations visited	432
Birth certificates investigated	44
Catch basins ordered cleaned	221
Stables inspected	2,844
Stables ordered repaired	1,263
Total number of visits	50,880

In addition to my work as Chief Sanitary Officer, the following detail work was also done by me during 1914:

Summons served	44
Cases in court	62
Old closets ordered repaired	202
New closets put in	58
Dry closets inspected	1,490
Dry closets ordered cleaned and destroyed	150
Closet boxes ordered in and houses repaired	851
Old stench traps repaired	13
New stench traps ordered in	2
Old hydrants ordered repaired	37
New dry closets ordered	22
Sewer connections ordered	107
Sewers ordered repaired and cleaned	75
Water connections ordered	27
Rain conductors, gutters and roofs ordered repaired	15
Kitchen sinks ordered repaired	20
Visits for Plumbing Inspector	11
Water pipes ordered repaired	14
Yards inspected	461
Yards ordered cleaned	316
Vacant lots inspected and ordered cleaned	7
Areas inspected—ordered cleaned and drained	0
Cellars ordered cleaned and drained	6
Outhouses inspected and ordered cleaned	9

Dead animals ordered to be removed	2
Alleys inspected	5
Alleys ordered cleaned	3
Old wells inspected—ordered cleaned and repaired	0
Old wells condemned and ordered filled	9
Manure piles ordered removed and barrels ordered	509
No cause for complaint	22
Contagious disease cards put up	7
Original houses visited	976
Premises inspected and revisited	5,738
Agents, Owners and Plumbers visited	333
Miscellaneous visits and orders	79
City water ordered on premises	119
Culture stations visited	7
Birth certificates investigated	0
Catch basins ordered cleaned	1
Stables inspected	1,827
Stables ordered repaired	578
Total number of visits	9,560

Respectfully submitted,

W. T. TUCK,
Chief Sanitary Officer.

REPORT OF SANITARY OFFICER, FIRST DISTRICT.

Dr. E. C. Levy,
Chief Health Officer, Richmond, Va.

Sir:

I have the honor to submit to you my report as Sanitary Officer for the First District for the year ending December 31, 1914.

Summons served	27
Cases in court	29
Old closets ordered repaired	309
New closets put in	28
Dry closets inspected	517
Dry closets ordered cleaned and destroyed	1
Closet boxes ordered in and houses repaired	29
Old stench traps repaired	96
New stench traps ordered in	12
Old hydrants ordered repaired	40
New dry closets ordered	1
Sewer connections ordered	10
Sewers ordered repaired and cleaned	68
Water connections ordered	1
Rain conductors, gutters and roofs ordered repaired	90
Kitchen sinks ordered repaired	68
Visits for Plumbing Inspector	1
Water pipes ordered repaired	55
Yards inspected	3,898
Yards ordered cleaned	1,228
Vacant lots inspected and ordered cleaned	2
Areas inspected—ordered cleaned and drained	0
Cellars ordered cleaned and drained	0
Outhouses inspected and ordered cleaned	0
Dead animals ordered to be removed	16
Alleys inspected	7
Alleys ordered cleaned	2
Old wells inspected—ordered cleaned and repaired	401
Old wells condemned and ordered filled	6
Manure piles ordered removed and barrels ordered	261
No cause for complaint	20
Contagious disease cards put up	16
Original houses visited	1,819
Premises inspected and revisited	4,755
Agents, Owners and Plumbers visited	1,163
Miscellaneous visits and orders	319
City water ordered on premises	54

Culture stations visited	52
Birth certificates investigated	0
Catch basins ordered cleaned	8
Stables inspected	273
Stables ordered repaired	0
Total number of visits	8,107

Respectfully submitted,

W. A. CRUMP,
Sanitary Officer.